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THE LAW OF THE ALGORITHMIC STATE IN CENTRAL AND EASTERN EUROPE

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Special Issue

THE LAW OF THE ALGORITHMIC STATE IN CENTRAL AND EASTERN EUROPE

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THE LAW OF THE ALGORITHMIC STATE IN CENTRAL AND EASTERN EUROPE. INTRODUCTION TO THE SPECIAL ISSUE

Marta Infantino and Mauro Bussani***

Abstract

The paper is an introduction to the special issue on the law of the algorithmic state in Central and Eastern Europe. It explains why the issue focuses on the state as developer and user of emerging technologies, and on Central and Eastern European countries as the relevant units of comparison. The paper gives some further insights about the methodology adopted in making the issue and about the main comparative lessons learned from this collective endeavour.

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1. Why This Special Issue

The general aim of this special issue is to provide a comparative overview of how the contemporary algorithmic turn is affecting the legal framework and the daily operation of the administrative state in different countries in Central and Eastern Europe. To this purpose, after a general overview of the topic authored by Roberto Scarciglia, the following twelve papers in the issue present the rules applicable to the state and state agencies in specific countries when they rely on algorithmic decision-making (ADM) and artificial intelligence (AI) systems in their activity. Moreover, the papers also delve into institutional practices adopted by public entities in each of the countries examined, and in the (for the time being very limited) litigation ensuing from such practices before national courts and independent authorities. A final, concluding paper by Angela Ferrari Zumbini and Martina Conticelli closes the issue.

The issue also pursues the objective of shedding light on some elements that are often forgotten or anyway downplayed in the transnational debate about emerging technologies. The current debate in English on these issues, for instance, tends to underestimate both the involvement of the state as a major developer and tester of new technologies, and the role of public institutions and their institutional practices in shaping the law regulating technology. Further, contemporary discourse on law and technology tends also not to consider whatever is going on outside of the United States, Western Europe, and occasionally North-East Asia. This issue tries to bridge these gaps inasmuch as Central and Eastern Europe is concerned.

The papers herein collected are part of a wider research project entitled 'The dark side of algorithms under the comparative lens: automated administrative decisions between efficiency and due process' (AutAD), financed by the Italian Ministry of University and Research, and coordinated at the national level by Angela Ferrari Zumbini[1]. The project is in continuity with a broader comparative law initiative, entitled the 'Common Core of European Administrative Laws' (CoCEAL), that was inaugurated in 2016 by

[1] Italian Ministry of Education and Research, 'Research Project of Relevant National Interest', grant n° 2022LSRL82. The project involves three Italian universities: the University of Naples Federico II (Angela Ferrari Zumbini), the University of Rome Tor Vergata (Martina Conticelli) and the University of Trieste (Marta Infantino).

Giacinto della Cananea and one of the authors of this paper, Mauro Bussani, who were awarded a European Research Council Advanced Grant in 2016 to study the commonalities and differences between the administrative laws of European countries[2]. The CoCEAL project, in turn, transplanted in the administrative sector the methodology developed since 1993 by Ugo Mattei and Mauro Bussani in the framework of the 'Common Core of European Private Law' project to investigate convergences and divergences between the private laws of European jurisdictions[3]. Standing on the shoulder of these giants, the AutAD research project aims to inquire, from a comparative law perspective, rules and standards applicable to public administration when it relies on ADM and AI. Angela Ferrari Zumbini and other colleagues are currently coordinating the work on Western Europe, the United States, and North-Eastern Asia, while the authors of this paper decided to supervise the research on Central and Eastern Europe. The essays collected in this special issue are the proceedings of an international conference on 'The Law of the Algorithmic State. Perspectives from Central and Eastern Europe', held in Trieste on 26-27 September 2024[4].

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[2] See http://www.coceal.it/ (visited 15 September 2024), as well as G. della Cananea & M. Bussani, *The 'Common Core' of administrative laws in Europe: A framework for analysis*, 26 Maastricht J. Eur. & Comp. L. 217–250 (2019). The scientific results of the CoCEAL project are published in a dedicated Oxford University Press series on 'The Common Core of European Administrative Law', edited by G. della Cananea & M. Bussani: see https://global.oup.com/academic/content/series/c/the-common-core-of-european-administrative-law-coceal/?cc=it&lang=en&, visited 15 September 2024.

[3] On the history and features of this project, see M. Bussani, *The Common Core of European Private Law Project Two Decades After: A New Beginning*, 15 Eur. Lawyer J. 9–26 (2015); M. Bussani & U. Mattei, *The Common Core Approach to European Private Law*, 3 Columbia J. Eur. L. 339–356 (1997-1998); M. Bussani, M. Infantino, F. Werro, *The Common Core Sound: Short Notes on Themes, Harmonies and Disharmonies in European Tort Law*, 20 King's L. J. 239–255 (2009); see also the websites https://www.cambridge.org/core/series/common-core-of-european-private-law/9A1F0195629A3C0607233F14029C3A25, visited 15 September 2024, and https://www.larcier-intersentia.com/en/series/the-common-core-european-private-law.html, visited 15 September 2024.

[4] See https://portale.units.it/sites/default/files/2024-09/LAW.pdf, visited 15 September 2024. It is not the first time that Trieste provides the location for legal studies looking specifically at Central and Eastern Europe. See M. Bussani (ed.), *European Tort Law: Eastern and Western Perspectives* (2007), collecting the proceedings of a conference held in Trieste in 2004; R. Scarciglia (ed.),

In the following pages, we will elaborate on the reasons underlying the choice of the topic and the geographic area of interest for this special issue. We will therefore explain in more detail why the issue focuses on the central role played by the state as a developer and as a user of ADMs and AI (section 2), on the general significance, beyond black letter law, of daily practices and litigated cases (section 3), and on the comparative value of the experiences in Central and Eastern European jurisdictions (section 4). After some additional details on the methodology adopted to realise the issue (section 5), we will try to summarise the main points we learned from this comparative enterprise (section 6).

2. The Rise of the Automated State

In the Western debate on algorithmic governance and regulation, it is often taken for granted that the main agents for disruption are private corporations, mostly from the United States: the so-called MAMAA (the new acronym for Meta, Apple, Microsoft, Amazon, and Google's parent company Alphabet), other social networks, online platforms and apps, as well as the many other more or less visible participants in the digital world, such as data brokers, data analytics, cloud service providers, and software and hardware companies[5]. Under this view, the few private actors

Administrative Law in the Balkans. Case Studies of Comparative Administrative Law in Albania, Bulgaria, Croatia, Serbia and Slovenia (2012), collecting the proceedings of a conference held in Trieste in 2010.

[5] In the wealth of literature on the subject in English, cf A. Narayanan & S. Kapoor, *AI Snake Oil: What Artificial Intelligence Can Do, What It Can't, and How to Tell the Difference* (2024); M. Broussard, *More than a Glitch. Confronting Race, Gender, and Ability Bias in Tech* (2023); T. Rodríguez de las Heras Ballell, *Trust in an 'Omnimetric Society'? Reputational Systems in Platforms as Tools for Assessing Contractual Performance and Applying Remedies*, in M. Bussani, S. Cassese, M. Infantino (eds), *Comparative Legal Metrics: Quantification of Performances as Regulatory Technique* (2023) 266–283; H.-W. Micklitz et alii (eds.), *Constitutional Challenges in the Algorithmic Society* (2021); H. Eidenmüller & G. Wagner, *Law by Algorithm* (2021); N. Couldry & U.A. Mejias, *The Costs of Connection. How Data is Colonizing Human Life and Appropriating it for Capitalism* (2019); S. Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (2019); S. Umoja Noble, *Algorithms of Oppression. How Search Engines Reinforce Racism* (2018); C. O'Neil, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* (2016); F. Pasquale, *The Black Box Society: The Secret Algorithms that Control Money and Information* (2015); H. Masum & M. Tovey (eds.), *The Reputation Society: How Online Opinions are Reshaping the Offline World* (2011).

that are controlling the development of emerging technologies are becoming the *de facto* transnational regulators of a variety of domains, and are able to govern individuals and collectives in ways that often are much more effective than those available to territorially limited nation-states[6].

There is no doubt that such accounts correctly depict a major shift that contemporary Western societies are currently undergoing. Yet, similar accounts also fail to acknowledge the extent to which, especially outside the Western world, technological developments and power are dependent on state infrastructure. The most obvious example is China. The People's Republic of China is today the main competitor of the United States in the digital and AI race[7]. This is also thanks to the circumstance that the Chinese government spent the last two decades cultivating and protecting its domestic tech industry that rests on particularly close ties between the government and private tech companies, each helping the other reach their goals[8]. The Chinese government is now engaging in a conscious effort to export Chinese digital technologies, offering an affordable path toward digital development to many developing countries and successfully exporting its state-driven digital infrastructure and regulatory model abroad[9]. Incidentally, it should be noted that, when one looks more closely to the private ordering by American corporations of the digital and AI-powered economy, it becomes clear that the technology may have originated in the private sectors, but its growth has substantially depended on public investments and has benefited from strong backing by the US government, inside and outside the country[10].

Besides the dependency of the private sector on state's economic and institutional support, the above Western-centric accounts fail to acknowledge the extent to which, in the Western legal tradition as elsewhere, the state is actively involved, and retains a central role, in the development and use of emerging

[6] See the authors quoted above, as well as P. Schiff Berman, *Understanding Global Legal Pluralism: From Local to Global, from Descriptive to Normative*, in P. Schiff Berman (ed.), *The Oxford Handbook of Global Legal Pluralism* (2020) 1–35, at 2.

[7] See Stanford University, *The AI Index Report 2024* (2024), at https://aiindex.stanford.edu/report/, visited 15 September 2024.

[8] A. Bradford, *The Global Battle to Regulate Technology* (2023) 69–90.

[9] A. Bradford, cit. at 8, 290–323.

[10] A. Bradford, cit. at 8, 265–279; National Research Council, *Funding a Revolution: Government Support for Computing Research* (1999) 198–225.

technologies. This holds true in common law jurisdictions, in which governments' ADM and AI toolkits are diverse and span all levels of the administrative state[11]. Some of these jurisdictions have enacted rules at the domestic level to ensure responsible government deployment of AI. For instance, Canada issued in 2019 a Directive on Automated Decision-Making that is modelled on the European Union's General Data Protection Regulation (GDPR)[12] and largely mimics administrative law values[13]. On October 2023 the US President adopted the 'Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence', which also includes measures to ensure responsible government deployment of AI and modernise federal AI infrastructure[14].

The importance of the state in the deployment of emerging technologies holds truer across the civil law tradition, which historically conceives the role of the state as not limited to the protection of private bargaining and property rights, but rather as an active player in the economy and as the fundamental provider of welfare and social justice[15]. In Western Europe, for instance, the

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[11] With respect to the United States, cf. C. Coglianese, *Administrative Law in the Automated State*, 150 Daedalus 104–120 (2021); D. Freeman Engstrom, D.E. Ho, C. M. Sharkey, M.-F. Cuéllar, *Government by Algorithm: Artificial Intelligence in Federal Administrative Agencies* (February 2020) at https://www.acus.gov/document/government-algorithm-artificial-intelligence-federal-administrative-agencies, visited 15 September 2024; V. Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* (2018). As to Canada, see Paul Daly, "Mapping Artificial Intelligence Use in the Government of Canada" (2023) 20 *Governance Review* 74–95 (2023). As to the United Kingdom, E. Sarid & O. Ben-Zvi, *Machine Learning and the Re-Enchantment of the Administrative State*, 87(2) Mod. L. Rev. 371–397 (2023); T.M. Vogl, C. Seidelin, B. Ganesh, J. Bright, *Smart Technology and the Emergence of Algorithmic Bureaucracy: Artificial Intelligence in UK Local Authorities*, 80 Pub. Admin. Rev. 946–961 (2020). As to Australia, Y.-F. Ng & S. Gray, *Disadvantage and the Automated Decision*, 43 Adelaide L. Rev. 641–677 (2022); J. Boughey & K. Miller (eds.), *The Automated State. Implications, Challenges and Opportunities for Public Law* (2021).

[12] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data.

[13] See https://www.tbs-sct.canada.ca/pol/doc-eng.aspx?id=32592, visited 15 September 2024.

[14] See https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/, visited 15 September 2024.

[15] M. Pargendler, *The Role of the State in Contract Law: The Common Law-Civil Law Divide*, 43 Yale J. Int'l L. 143–189 (2018); J.H. Merryman & R. Pérez-Perdomo, *The*

recourse to AI systems in the public sector is ever-increasing[16], as are the rules governing the reliance on ADMs and AI by public powers. Many reforms have been made in the last few years to control the use of ADM and AI by public powers. Rules on ADM and AI are now explicitly enshrined in the French Code on the relations between the public and the administration (since 2016),[17] in the German Administrative Procedure Act (since 2017)[18] and in the Swedish Administrative Procedure Act (of 2017)[19], in the Portuguese Charter of Human Rights in the Digital Age (of 2021)[20], and in the Italian Code of Public Contracts (of 2023)[21]. In 2021, Spain adopted a Charter of digital rights, article XVI of which deals with

Civil Law Tradition. An Introduction to the Legal Systems of Europe and Latin America (3rd edn, 2007) 96–97.

[16] H.C.H. Hofmann & F. Pflücke (eds.), *Governance of Automated Decision-Making and EU Law* (2024); L. Tangi et alii, *AI Watch. European landscape on the use of Artificial Intelligence by the Public Sector* (2022), at http://data.europa.eu/89h/7342ea15-fd4f-4184-9603-98bd87d8239a, visited 15 September 2024; J. Wolswinkel, *Artificial Intelligence and Administrative Law* (2022), at https://www.coe.int/documents/22298481/0/CDCJ%282022%2931E+-+FINAL+6.pdf/4cb20e4b-3da9-d4d4-2da0-65c11cd16116?t=1670943260563, visited 15 September 2024. See also D.-U. Galetta & G. Pinotti, *Automation and Algorithmic Decision-Making in the Italian Public Administration*, 1 CERIDAP 13–23; E. Gamero Casado, *Automated Decision-Making Systems in Spanish Administrative Law*, 1 CERIDAP 24–40 (2023); F. Merli, *Automated Decision-Making Systems in Austrian Administrative Law*, 1 CERIDAP 41–50 (2023); J. Reichel, *Regulating Automation of Swedish Public Administration*, 1 CERIDAP 75–94 (2023); J.-P. Schneider & F. Enderlein, *Automated Decision-Making Systems in German Administrative Law*, 1 CERIDAP 95–115 (2023).

[17] Article L. 311-3-1 of the *Code des relations entre le public et l'administration*, as amended by the Law No. 2016-1321 of 7 October 2016 for a Digital Republic, https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000033205535, visited 15 September 2024.

[18] Article 35a of the *Verwaltungsverfahrensgesetz*, as amended in 2016, effective 2017, at https://www.gesetze-im-internet.de/vwvfg/__35a.html, visited 15 September 2024.

[19] Section 28 of the Swedish *Förvaltningslag* of 2017, at https://www.government.se/contentassets/3c56d854a4034fae9160e12738429fb8/the-administrative-procedure-act-2017900/, visited 15 September 2024.

[20] See Article 9 of the *Carta portuguesa de direitos humanos na era digital*, approved by the Law No. 27/2021, of 17 May, at https://www.pgdlisboa.pt/leis/lei_mostra_articulado.php?nid=3446&tabela=leis&so_miolo=, visited 15 September 2024.

[21] Article 30 of the *Decreto Legislativo* 31 March 2023, n. 36, at https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2023;036, visited 15 September 2024.

'Derechos digitales de la ciudadanía en sus relaciones con las Administraciones públicas' ('citizens' digital rights when dealing with the state administration')[22]. On a pan-European level, the European Law Institute – the academic think-tank that acts as an informal advisor to the European Union – released in 2022 its 'Model Rules on Impact Assessment of Algorithmic Decision-Making Systems Used by Public Administration' to help public authorities analyse the effects of relying on ADMs[23]. In March 2024, the European Union approved the Interoperable Europe Act to foster public sector interoperability across the Union[24]; in June 2024, the approval of the Regulation on Artificial Intelligence (AI Act) followed[25]. The AI Act identifies some particular uses of AI as high-risk, and obliges whoever places them in the EU market or uses them in the EU to comply with a number of ex-ante obligations, such as putting in place a risk management system, writing down technical documentation, providing for human supervision, and undergoing a conformity assessment[26]. What is interesting to note is that almost all the presumptively high-risk forms of AI listed by Annex III of the Act (e.g., AI used to manage road traffic and the supply of water, gas, heating and electricity, to determine admission in schools, to evaluate the eligibility to welfare programs, to classify emergency calls, to assess the risk of offending by a natural person, to examine applications for asylum, visa and residence permit, and to apply the law to disputes brought to courts) involve public uses of AI[27]. In September 2024, the Council

[22] *Carta de Derechos Digitales*, 2021, at https://portal.mineco.gob.es/RecursosArticulo/mineco/ministerio/participacion_publica/audiencia/ficheros/SEDIACartaDerechosDigitales.pdf, visited 15 September 2024.

[23] European Law Institute, *Model Rules on Impact Assessment of Algorithmic Decision-Making Systems Used by Public Administration* (2022), at https://www.europeanlawinstitute.eu/fileadmin/user_upload/p_eli/Publications/ELI_Model_Rules_on_Impact_Assessment_of_ADMSs_Used_by_Public_Administration.pdf, visited 15 September 2024.

[24] Regulation (EU) 2024/903 of the European Parliament and of the Council of 13 March 2024 laying down measures for a high level of public sector interoperability across the Union (Interoperable Europe Act).

[25] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act).

[26] Artificial Intelligence Act, articles 8–22.

[27] See O.M. Puigpelat, *The impact of the AI Act on public authorities and on administrative procedures* (2023) 4 *CERIDAP* 238-252; O.M. Puigpelat, *Algorithms,*

of Europe entered the field by adopting its Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law, which aims to regulate artificial intelligence systems used by public authorities and private persons when exercising prerogatives of official authority[28].

All the above demonstrates that, notwithstanding the emphasis placed by dominant narratives on private actors, state infrastructures (especially, though not only, in civil law jurisdictions) are significant players in the AI race, taking administrative decisions on a daily basis and performing tasks through sophisticated computer software, with no or minimal direct human intervention. Understanding how public powers do this, in what sectors, for what decisions and tasks, and with what guarantees is, therefore, of the utmost importance.

3. Daily Practices and Litigated Cases

As is common in moments of technological disruption, legal frameworks take some time to adapt to novelties. While, as hinted in section II, some countries and regions have already adopted regulation or standards to guide the reliance on ADMs and AI by public infrastructures, it generally remains to be seen how well-established rules, principles and doctrines applicable to the administrative state will be adjusted to the new context. Much of the existing scholarship on the topic is undertaking precisely this mission of proposing how to update or reform well-established administrative legal frameworks, embedded either in constitutions or in national statutes, in light of recent technological innovations, so as to unleash opportunities while addressing emerging concerns[29].

The path we decided to take in our research is slightly different. Of course, constitutional frameworks and administrative

automation and administrative procedure at EU level (2023) University of Luxembourg Law Research Paper No. 2023-08, at http://dx.doi.org/10.2139/ssrn.4561009, accessed 12 September 2024.

[28] Council of Europe, *Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law* (2024), at https://www.coe.int/en/web/artificial-intelligence/the-framework-convention-on-artificial-intelligence, visited 15 September 2024.

[29] Cf C. Coglianese, cit. at 11; D.-U. Galetta & G. Pinotti, cit. at 16; E. Gamero Casado, cit. at 16; F. Merli, cit. at 16; J. Reichel, cit. at 16; J.-P. Schneider & F. Enderlein, cit. at 16.

statutes are fundamental sources of rules for the algorithmic state. Yet, they also often represent the outer layer of complex systems which determine how public entities work. The daily functioning of state infrastructures is actually determined by many more legal and extra-legal formants[30]: from judicial trends to doctrinal opinions and intellectual views on the administrative sciences, from bureaucratic practices and public employees' institutional ethos to people's shared expectations about the state and public servants. This is why, in continuity with the Common Core's methodology mentioned in Section 1[31], we asked our rapporteurs not only to look at existing and prospective legislation, but also to delve into cases litigated before courts and internal practices, so as to unveil some of the most important and least visible (especially from outside a country) factors that have an impact on the functioning of the public administration in their legal system.

Looking at these formants offers a particularly useful perspective to see how the algorithmic state works. Many of the strategic choices that public entities constantly make – which kind of technology they may rely on, produced by whom, in which sectors, for which tasks, relying on which data, with what level of transparency and explainability, for what outcomes – are determined less by constitutional and statutory grand-principles than by determinations made by these entities within the scope of their organisational autonomy, which in their turn are sensitive to bureaucratic habits and local contingencies[32]. Investigating real-world practices, however, is a daunting task. Public entities' choices are numerous, fragmented, ever-changing and not always clearly documented. Given this reality, our rapporteurs did the best they could.

In the United States and Western Europe, another important source of information about (and regulation of) the automated state stems from claims brought before courts against public authorities

[30] Legal and extra-legal formants were notoriously defined by the great Italian comparative law scholar Rodolfo Sacco as the formative elements that are at work in each legal system and that make up any given legal rule: R. Sacco, *Legal Formants: A Dynamic Approach to Comparative Law (Installment I of II)*, 39 Am. J. Comp. L. 1–31, at 21–27 (1991).

[31] See G. della Cananea & M. Bussani, cit. at 2, 9, 25 (on CoCeal methodology); M. Bussani & U. Mattei, cit. at 3, 344–346; M. Bussani, M. Infantino, F. Werro, cit. at 3, 242.

[32] M. Broussard, cit. at 5, 76–77; J. Wolswinkel, cit. at 16, 21; D. Freeman Engstrom et alii, cit. at 16, 6–8.

relying on ADMs and AI. In the US, for instance, the analysis of litigation trends shows that American cities, departments, and agencies resort to algorithms for assessing teachers' performances and terminating their contracts[33], for investigating fraud in unemployment benefits[34], for disbursing disability benefits[35], and for performing constant video surveillance through drones and tracking people's habits for crime analytics[36]. The same litigation also makes evident the urgency to rein in some of the technological enthusiasm: in one case the state of Michigan invested 47 Million USD in a private contract for the development of an algorithm that is able to learn from historical data how to detect fraud in unemployment benefits. The algorithm, which became the 'Michigan Integrated Data Automated System' (Midas), was used between 2013 and 2015 to accuse thousands of Michiganders of fraud and to revoke the disbursement of their benefits. A few years later, controls by government accountants demonstrated that 93% of Midas fraud adjudications were false-positives[37]. Outside the US but still in the common law world, experimentations with ADMs and AI that ended up in court include the reliance by the Commonwealth of Australia on an automated debt-collection system intended to recover overpaid social security payments[38],

[33] *Hous. Fed'n of Teachers Local 2415 v. Hous. Indep. Sch. Dist*., 251 F. Supp. 3d 1168 (S.D. Tex. 2017) (against the privately contracted algorithm used by the Houston Independent School District to assess teachers' performances).

[34] See for instance *Scott v. Dep't of Labor & Econ. Opportunity*, 1st District Court of Appeals, May 25, 2023, 2023 Mich. App. LEXIS 3755 (on Michigan's privately contracted automated fraud detection program).

[35] *K.W. v. Armstrong*, Idaho District Court, March 28, 2016, 180 F. Supp. 3d 703 (on Idaho's privately contracted tool to assess Medicaid disability benefits; the class action is still ongoing); *Michael T. v. Crouch*, West Virginia Southern District Court, March 26, 2018, 2018 U.S. Dist. LEXIS 49598 (on West Virginia's privately contracted tool to assess Medicaid disability benefits).

[36] *Leaders of a Beautiful Struggle v. Balt. Police Dep't*, 4th Circuit Court of Appeals, June 24, 2021, 2F.4th 330 (on the privately contracted drone and image analytics services set up by the Baltimore Police Department).

[37] See for instance *Zynda v. Arwood*, United States District Court for the Eastern District of Michigan, 175 F. Supp. 3d 791 (E.D. Mich. 2016); *Scott v. Dep't of Labor & Econ. Opportunity*, 1st District Court of Appeals, May 25, 2023, Mich. App. LEXIS 3755, 12. See also S.M. Gipson Rankin, *The Midas Touch: Atuahene's 'Stategraft' and Unregulated Artificial Intelligence*, 98 NYU L. Rev. Online 225–245 (2023).

[38] *Katherine Prygodicz & Ors v The Commonwealth of Australia (No 2*) [2021] FCA 634 (11 June 2021) (approving the parties' settlements in the (in)famous Robodebt scandal).

attempts by the Welsh police to use surveillance cameras and face recognition tools[39], the acquisition and automated treatment of bulk communications data of the entire population by various UK security and intelligence agencies[40], and the outsourcing of the development of mobile apps to track citizens' health and movements during the Covid-19 pandemic by several Indian states[41].

Litigation is mounting in civil law countries too. In Western Europe, French courts have already dealt with a myriad of contestations, involving, for instance, the use of biometric face recognition systems by schools in disadvantaged neighbourhoods[42], the establishment of a nation-wide secret software aimed at assessing and matching profiles of students with universities[43], the reliance on face recognition to log-in in a national health app[44], and the creation, in the context of the Covid-19 pandemic, of a national 'Health Data Hub' collecting (more or less closely) related-medical information of the population and storing the data in servers located in France, the Netherlands and Ireland[45]. Dutch courts have intervened to rule on the legitimacy of governmental use of software to grant environmental

[39] *R (Bridges) v Chief Constable of South Wales Police* [2020] EWCA Civ 1058.

[40] European Court of Human Rights (Grand Chamber), *Big Brother Watch v. United Kingdom*, 25 May 2021, Applications nos. 58170/13, 62322/14 and 24960/15; Court of Justice of the European Union (Grand Chamber), *Privacy International c. Secretary of State for Foreign and Commonwealth Affairs and Others*, 6 October 2020, C-623/17, ECLI:EU:C:2020:790.

[41] Cf Karnataka High Court, *Anivar A. Aravind v. Ministry of Home Affairs*, 25 January 2021, WP no. 7483/2020; *Balu Gopalakrishnan v. State of Kerala and Ors.*, 24 April 2020, WP no. 84/2020.

[42] Tribunal of Marseille, 27 February 2020, n° 1901249, available at https://www.laquadrature.net/wp-content/uploads/sites/8/2020/02/1090394890_1901249.pdf, visited 15 September 2024.

[43] Conseil Constitutionnel, 3 April 2020, n° 2020-834 QPC, at https://www.conseil-constitutionnel.fr/decision/2020/2020834QPC.htm, visited 15 September 2024. The same Constitutional Court also issued a decision in 2018 confirming, in general, that the state administration can lawfully rely on ADMs and AI, provided that legal rules are respected: Conseil constitutionnel, 12 June 2018, no. 2018-765 QPC, at https://www.conseil-constitutionnel.fr/en/decision/2018/2018765DC.htm, visited 15 September 2024.

[44] Conseil d'État, 4 November 2020, n° 432656, ECLI:FR:CECHR:2020:432656.20201104.

[45] Conseil d'État, 19 June 2020, n° 440916, ECLI:FR:CEORD:2020:440916.20200619

authorisations[46], to assess the value of land for tax purposes[47], and to predict the risk of social security fraud by welfare recipients[48]. An algorithmic system that was meant to identify vulnerable groups who could get a discount in the electricity bills was (unsuccessfully) challenged before Spanish courts[49]. In Italy the software employed by the Ministry of Education to fill vacant teaching positions nationwide have spurred repeated complaints, which have largely been upheld[50]. Equally successful has been the litigation in Austria against the Arbeitsmarktservice (AMS) algorithm that was designed to classify job seekers' applications but systematically favoured the same categories of people[51]. At the request of the Belgian Constitutional Court, the Court of Justice of the European Union evaluated the (un)reasonableness of the use by airports of automated means for processing the data of passengers from flights from outside the EU and comparing them with international databases of criminals in the context of antiterrorism measures, considering that these programs resulted in five false positives out of the six persons stopped[52].

This growing case-law shows that the shift to digitisation, automation and intelligent systems is a process of trial and error that may come at substantial cost to those who are involved in it – and particularly so for the most vulnerable sectors of the population: persons with disabilities, job seekers, welfare

[46] Raad van State, 17 May 2017, ECLI:NL:RVS:2017:1259 (so-called Aerius I).
[47] Hoge Raad, 17 August 2018, 17/01448, ECLI:NL:HR:2018:1316.
[48] The Hague District Court, 2 March 2020, ECLI:NL:RBDHA:2020:865 (it was the famous Systeem Risico Indicatie – SyRi – algorithm); for a comment to this decision, see S.E. Biber, *Between Humans and Machines: Judicial Interpretation of the Automated Decision-Making Practices in the EU*, in H.C.H. Hofmann & F. Pflücke (eds.), cit. at 16, 186–212, at 201–203.
[49] Juzgado Central de lo Contencioso Administrativo, número 8, 31 December 2021, n. 143, ECLI:ES:AN:2021:5863.
[50] See Consiglio di Stato, 13 December 2019, n° 8472 (2020) *Foro italiano* III, 340; Consiglio di Stato, 8 April 2019, n° 2270 (2019) *Foro italiano* III, 606; Rome Tribunal, labour section, 10 February 2023, n° 1463, at https://www.wikilabour.it/wp-content/uploads/2023/03/20230210_Trib-Roma.pdf, visited 15 September 2024. On this case-law, see S.E. Biber, cit. at 48, 203–205.
[51] Verwaltungsgerichtshof, 21 December 2023, Ro 2021/04/0010-11, at https://www.vwgh.gv.at/medien/mitteilungen/Ro_2021040010.pdf?9g4sif, visited 15 September 2024.
[52] Court of Justice of the European Union (Grand Chamber), 21 June 2022, *Ligue des droits humains ASBL v Conseil des ministres*, C-817/19, ECLI:EU:C:2022:491.

beneficiaries, immigrants, etc. The rising number of disputes brought against public authorities in the US and in Western Europe also suggests that, in the future, as reliance on algorithms becomes more widespread in society, litigation against public authorities will likely keep growing. This is likely to happen not only because a substantial fraction of algorithmic accidents may be related to the deployment of algorithms by the state, but also because, from the perspective of the potential plaintiffs, public entities look like the ideal defendants. States and their agencies are generally permanent, deep-pocketed, and too-big-to-fail. Moreover, public authorities are often located in the same country as the plaintiffs, speak the same language, and are subject to the same national law – a law that cannot be set aside or changed through standard terms and conditions proposing curious fora and exotic applicable laws for dispute settlement, as is ordinarily done by the private actors dominating the sector[53].

Surveying judicial developments therefore seems to offer a promising avenue to understand trends in the public domain. Yet, like in the case of administrative practices, getting to case-law may be difficult, especially when judgments are not published online and are available in a language that is not the lingua franca. This is why the mission entrusted to our national rapporteurs included hunting decisions buried in national case-law and conveying their gist to an international readership. As we will see, though, the results of this search have been meagre. For the time being, litigation stemming from public uses of algorithms, ADM and AI is virtually non-existent in almost the entire region. Before we delve into the findings of our project in Section VI, however, some additional information on the features of the region under examination and on the methodology of this research are needed, and are given in Sections 4 and 5 respectively.

4. A Focus on Central and Eastern Europe

The overview of the initiatives, the literature and the case-law on law and technology in Sections 2 and 3 is testament to the growing attention devoted to our topic. The same overview also shows that such attention has so far been selective, and is focused

[53] M. Infantino & W. Wang, "Algorithmic Torts: A Prospective Comparative Overview" (2019) 28 *Transnat' L & Contemp Probls* 309–362, at 351 (2019).

almost exclusively on North America and Western Europe[54]. It is our belief that there is a lot to be discovered beyond the usual suspects for comparative legal research.

This is why this issue is focusing on Central and Eastern Europe. In spite of its size, the region has until not so long ago been largely unconsidered when discussing developments in administrative law in Europe, which is still too often conflated in the mainstream debate with Western Europe[55]. The Western-European bias has thus overlooked the richness of a region which is very diverse within itself. Central and Eastern Europe spans between Germany and Russia on the West-East axis and between the Baltic Sea and the Mediterranean Sea on the North-South axis. Although the entire block belongs to the civil law tradition, it is extremely varied in terms of language, culture, and history[56]. The

[54] The problem of the Western-centric bias of mainstream comparative law studies is well-known. See, for instance, W.E. Butler & O.V. Kresin, *Discovering the Unexpected*, in W.E. Butler & O.V. Kresin (eds.), *Discovering the Unexpected. Comparative Legal Studies in Eastern and Central Europe* (2021) xi–xiv; G. Frankenberg, *Comparative Law as Critique* (2016), 85–96; R. Hirschl, *Comparative Matters. The Renaissance of Comparative Constitutional Law* (2014) 16, 211–212; A. Peters & H. Schwenke, *Comparative Law beyond Post-Modernism*, 49 Int'l & Comp. L. Q. 800–834, at 829 (2000); G. Frankenberg, *Critical Comparisons: Rethinking Comparative Law*, 26 Harv. Int'l L. J. 411–456, at 422–424 (1985).

[55] In recent years a number of studies have devoted their attention to Central and Eastern Europe. Apart from the CoCEAL project mentioned above, at 2, see J.J. Hesse (ed.), *Administrative transformation in Central and Eastern Europe: towards public sector reform in post-communist societies* (1993); D.J. Galligan & D.M. Smilov (eds.), *Administrative Law in Central and Eastern Europe* (1999); R. Scarciglia (ed.), cit. at 4; D. Goncharov, S. Liebert, S.E. Condrey (eds.), *Public Administration in Post-Communist Countries. Former Soviet Union, Central and Eastern Europe, and Mongolia* (2017); U. Stelkens & A. Andrijauskaitė (eds.), *Good Administration and the Council of Europe: Law, Principles, and Effectiveness* (2020); I. Deviatnikovaitė (ed.), *Comparative Administrative Law. Perspectives from Central and Eastern Europe* (2024).

[56] On the features that follow, C. Cercel, A. Mercescu, M.M. Sadowski (eds.), *Law, Culture and Identity in Central and Eastern Europe. A Comparative Engagement* (2024); A. Shirvindt, *Former Soviet States of Eastern Europe, Caucasus and Central Asia*, in M. Siems & P.J. Yap (eds.), *The Cambridge Handbook of Comparative Law* (2024) 275–301; W. Butler & O. Kresin, cit. at 54; Z. Kühn, *Comparative Law in Central and Eastern Europe*, in M. Reimann & R. Zimmermann (eds.), *The Oxford Handbook of Comparative Law* (2nd edn, 2019) 181–200; R. Mańko, *Delimiting Central Europe as a Juridical Space: A Preliminary Exercise in Critical Legal Geography*, 89 Acta Universitatis Lodziensis. Folia Iuridica 63–80 (2019); B. Bugaric, *Law and Development in Central and Eastern Europe. The Neoliberal Developmental State and*

three Baltic states up north have little in common with the Slavic region historically under the influence of the Byzantine Eastern Roman Empire down in the South. Speaking of empires, many countries in the region were for a large part of their history included in wider political units (in particular, the Ottoman empire in the South and the Habsburg Empire in the Centre); others, such as Poland, were for a long time autonomous or semi-autonomous kingdoms. A large majority of the countries in question are Christian Orthodox, but some of them are overwhelmingly Catholic (for instance, in Poland), Lutheran (e.g., Latvia) and Muslim (Turkey and Albania). In the Twentieth century, many of the countries in our group (excluding Turkey) were either part of the Soviet Union or affiliated to the Soviet Block, and then were subject to conspicuous reforms in their transition from socialism to capitalism. All the countries surveyed are nowadays members of the Council of Europe; the majority of them also belong to the European Union (the exceptions are Albania, Serbia and Turkey).

From an administrative law viewpoint, the state architecture and functioning in the jurisdictions surveyed are typical of civil law jurisdictions; some of these countries adopted the French model of the administrative state (most notably, Turkey[57]), while others (such as Poland, Hungary and former Czechoslovakian and Yugoslavian countries) were under the influence of the Austrian system, as shown by the enactment of a special legislation on administrative procedure along the lines of the Austrian General Administrative Procedure Act of 1925[58]. While not all the countries examined underwent a socialist period, all of them were in recent times influenced, either directly or indirectly, by requirements,

Its Problems, in R. Peerenboom & T. Ginsburg (eds.), *Law and Development of Middle-Income Countries: Avoiding the Middle-Income Trap* (2014) 131–155.

[57] See E. Örücü, *Conseil d'Etat: The French Layer of Turkish Administrative Law*, 49 Int'l & Comp. L. Q. 679–700 (2000); T. Balta, *Reports on Turkish Administrative Law and Institutions*" (1956) 5 Annales de la Faculté de Droit d'Istanbul 186–204 (1956).

[58] I. Deviatnikovaitė & S. Bareikytė, *Comparative Remarks*, in I. Deviatnikovaitė (ed.), cit. at 55, 225–239, at 225; G. della Cananea, *The Common Core of European Administrative Laws* (2023) 74–77; L. Potesil & F. Křepelka, *The Legislation on Administrative Procedure in Czechoslovakia*, in G. della Cananea, A. Ferrari Zumbini, O. Pfersmann (eds.), *The Austrian Codification of Administrative Procedure. Diffusion and Oblivion (1920-1970)* (2023) 86–99; S. Lilić & M. Milenković, *Administrative Procedure in Former Yugoslavia and the Austrian Administrative Procedure Act*, ibidem, 119–134; A.Zs. Varga, *The Hungarian Legislation on Administrative Procedure*, ibidem, 135–144.

standards and models stemming from either Strasbourg or Brussels/Luxembourg, as well as from neoliberal ideology coming from the United States and international financial institutions[59]. All these features made Central and Eastern European countries the ideal candidates for a study on the law of the algorithmic and automated state: they all have old, well-established and broad public infrastructures that are at the same time sufficiently close to be meaningfully compared with one another and sufficiently diverse to provide interesting results.

5. The Project's Methodology

As said before, the comparative research herein carried out has benefited from previous Common Core-inspired research projects[60], and is the result of a collective effort by many people acting as national reporters for their own country. In the summer of 2023, we gathered a team of experts from twelve jurisdictions, developed with them a set of questions about the use of ADMs and AI by public powers, and convened them in Trieste on 26-27 September 2024 to present and discuss the findings on their national experience.

Readers not familiar with Trieste's history may wonder why Trieste[61]. Trieste today is Italian, but has historically been at the crossroad of Roman, Slavic, and Germanic influence. The former Illyric, subsequently Roman, settlement of Trieste in the fourteenth century sought shelter under the Habsburg Empire in order to escape Venetian subjugation. The city got in 1719 the status of Free Harbour and in 1769 that of Free City, which included the at the time not-so-common freedom of religion. The city rapidly became a vivid commercial centre where people of Giulian-Dalmatian, Venetian, Friulan, Slovenian, Austrian, Armenian, Jewish, Serbian,

[59] I. Deviatnikovaitė & S. Bareikytė (n.58) 226 238–239 (as to the EU); U. Stelkens & A. Andrijauskaitė, *Introduction: Setting the Scene for a 'True European Administrative Law*, in U. Stelkens & A. Andrijauskaitė (eds.), cit. at 55, 1–54 (as to the CoE); G. della Cananea, cit. at 58, 17–19 (as to the CoE and the EU); B. Bugaric, cit. at 56, 131–155 (as to neoliberal paradigms).

[60] See above, at nn 2–3.

[61] On what follows, see J. Morris, *Trieste and the meaning of nowhere* (2002); E.-N. Kappus, *Changing history: ethnic identity management in Trieste*, in C. Govers & H. Vermeulen (eds.), *The politics of ethnic consciousness* (1997) 90–120; A. Ara & C. Magris, *Trieste. Un'identità di frontiera* (1987); V. Scussa, *Storia cronografica di Trieste dalla sua origine sino all'anno 1695* (1863).

German, Greek, and other origins integrated into the urban merchant life. Annexation of Trieste to Italy at the end of WWI marked the decline of the commercial fortunes of the city and the spread of ethnic conflict. After WWII and until the dissolution of socialist Yugoslavia, Trieste found itself at the border of the European Iron Curtain, stretching from Stettin to the Adriatic Sea. Even today, Trieste is the last Italian city before the border with Slovenia. The city's strategic location and its historical connective role between Central and Eastern Europe and the Mediterranean Sea make it an ideal confluence place to discuss legal developments in Central and Eastern Europe.

All national reporters therefore convened in Trieste in September 2024 to present and discuss their findings. Obviously, national reporters abided by the guidelines established at the outset of the project in a manner they deemed appropriate, which has resulted in some divergence and diversity in execution. Apart from this unavoidable variation, the following methodological caveats have to be kept in mind when appreciating the findings of this special issue.

First of all, as in any collective endeavour based on responses given to a questionnaire by a handful of national reporters, national overviews are inevitably informed by the reporters' subjective views on their own legal system and technological developments, as well as by their personal beliefs and idiosyncrasies. Other persons from the same jurisdiction may have provided a different description of the state-of-the-art of the country.

Second, the topic in itself suffers from an inherent ambiguity. As most of the papers underline, there is currently no agreed definition for many of the terms herein employed. This holds true, for instance, for the meaning of algorithm, automation, digitisation, ADM and AI[62]. The ambiguity problem is aggravated by the need to translate into English concepts that were originally expressed in another language. Moreover, clear data about the technologies employed and the practices followed are often missing – which is

[62] It should nevertheless be noted that, for some of these notions, a partial definition can be found in international and supranational texts. For instance, the Organisation for Economic Co-operation and Development has provided a generally-agreed upon definition of artificial intelligence (see https://oecd.ai/en/wonk/ai-system-definition-update, visited 15 September 2024), that is now enshrined into the definition of an AI system under the Art. 3, no. 1, of the EU AI Act.

the reason why many of our reporters resorted to interviews and exchanges with administrators and officials to gather relevant information[63].

Third, a further layer of complexity comes from the fact that the legal systems differ not only in their rules, but also in the vocabulary and in the general frameworks they resort to for dealing with administrative law. For instance, the countries herein considered may have diverging understanding not only of what digitisation entails, but also of notions of public administration, administrative proceedings, judicial review, and so on and so forth. While these differences in rules, vocabulary and frameworks convey the 'spirit' of the legal culture they stem from, they obviously also affect the comparability of the national answers herein collected.

All the above caveats obviously apply to the work of the editors as well. In spite of our best efforts, our own bias may have affected the questions we thought were relevant, as well as our own interpretation of the reporters' results. We hope that nevertheless the following results are interesting.

6. What We Learned

The country papers collected in this issue highlight clear lines of convergence inasmuch as all the states considered are involved in redesigning government service delivery mechanisms and adjusting them to (what is often called) the 4th Industrial Revolution. In all the countries surveyed, this implies the restructuring of traditional services, the testing and development of diverse technologies and solutions, the recalibration of the functions of the public administration apparatus, the training of public employees, the internal standardisation of services, the establishment of new forms of public-private partnerships and the creation of new avenues of interaction with the citizenry. In many cases, this adjustment is occurring in the absence of a parallel restructuring of the legal framework, thus opening up doubts and possibilities as to the adaptability of old principles and rules to new scenarios. It seems that, differently from what we saw happening in the United States and Western Europe, scholars and courts in the

[63] See the papers on Bulgaria, Latvia, Poland and Romania.

region have yet to carefully consider the implications of the above developments.

At the same time, the following national papers also show a considerable divergence between countries as to the path and pace of change. While in some places (e.g. Bulgaria) the main focus is still on transitioning from in person, paper-based services to electronic services, other countries are experimenting with ADM (this is for instance the case for Latvia and Lithuania when handling tax and traffic violations) and with AI (as is happening in Albania and Turkey in the context of crime, security and border management). Quite unsurprisingly, these different paths and paces seem to be connected to varying degrees of cautiousness and enthusiasm vis-à-vis this technological transformation. The slower the pace, the higher the awareness of the possible risks associated with technology; the faster the pace, the keener the enthusiasm for the possibilities new technologies open up. It is however hard to tell whether it is the level of technological development that influences attitudes towards risk, or rather the reverse.

In the following pages, we will try to detail our main comparative findings with regard to the timing and context of the transformations just mentioned (section 6.1), the sectors and the technologies that are mostly concerned with them (section 6.2), and the impact of these developments on national legal architectures (section 6.3).

6.1. Time, Hopes and Fears

All the countries herein investigated have, in recent times, engaged in a massive restructuring of their public administration. From the papers collected in this issue, two massive waves of transformation are evident[64]. The first one started at the beginning of the 2000s, leading many countries to work on the creation of e-government, that is, the idea of re-organising government around the management and use of information in electronic format. A second wave of reforms is visible from 2020 onwards, as distinctly aimed at the implementation of a digital, smart and automated government, in which diverse technologies and smart tools are a

[64] This is in line with the development of research and literature on e-government and the digital state: see E.W. Welch, *Introduction to the Research Handbook on E-Government*, in E.W. Welch (ed.), *Research Handbook on E-Government* (2021) 1–11, at 4–7. See also D.R. Trotiño, *eGovernance as a Future Option*, in D.R. Trotiño (ed.), *e-Governance in the European Union* (2024) 1-6.

core-integrated part in the functioning and operation of public administration at many levels, including some involving decision-making.

The rationale upon which such transformations are based are everywhere the same. Embracing digital technologies is expected to enhance the quality, efficiency and effectiveness of public administration, to increase transparency, accountability, accessibility and equal access of public services, to favour coordination and uniformity, to reduce red tape and costly delays, to limit corruption and ultimately improve governance[65]. The country papers also highlight substantial international pressure for governments to move in this direction. The digital transformation of the public sector is actively promoted by supranational global and regional actors, such as the United Nations (UN), the Organisation for Economic Cooperation and Development (OECD), the Council of Europe (CoE) and the European Union (EU)[66]. The international pressure is further substantiated by the many indicators that have emerged in recent years to reward countries with technological developments[67]. Our reporters mention, for instance, the e-Government Index of the United Nations[68], the Digital Government Index by the Organization for Economic Cooperation and Development[69], the Digital Economy

[65] See the country papers in this special issue, but also the collection of trends of digital government policies and practices sponsored by the Organisation for Economic Co-operation and Development at https://www.oecd-ilibrary.org/governance/oecd-digital-government-studies_24131962, accessed 20 September 2024.

[66] See the references contained in the national report to the UN (Albania, Poland, Serbia, Slovenia), the OECD (Albania, Poland, Lithuania, Turkey), the CoE (Albania, Bulgaria, Poland, Slovenia, Turkey) and the EU (Albania, Bulgaria, Croatia, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Serbia, Slovenia Turkey). Romania interestingly partenered in 2009 with the South Korean Ministry of Public Administration to implement the transition to e-government.

[67] On these technology-related indicators and their effects, see T. Erkkilä, *Global indicators and AI policy: Metrics, policy scripts and narratives*, 40 *Review of Policy Research* 811–839 (2023), DOI:10.1111/ropr.12556. Indicators are well-known to work are as invisible tools for legal harmonisation: see, among the many, S.P. de Souza, *Designing Indicators for a Plural Legal World* (2022) 99–103; M. Infantino, *Global indicators*, in S. Cassese (ed), *Research Handbook on Global Administrative Law* (2016) 347–358; D. Restrepo Amariles, *Legal indicators, global law and legal pluralism: an introduction*, 47 *Journal of Legal Pluralism & Unofficial Law* 9–21 (2015).

[68] See the papers on Albania, Czech Republic and Turkey.

[69] See the papers on Czech Republic and Lithuania.

and Society Index by the European Union[70], and the Government AI Readiness Index Reports" prepared by Oxford Insights[71]. From this perspective, winning the digital race may occasionally also be a matter of national pride[72].

At the same time, as hinted above, many papers also cast doubts on the unqualified desirability of this transition. Many national reporters seem to be wary of the implications that the rise of the smart state may have for privacy and data protection[73], as well as for transparency of public decision-making and actions[74]. The need for strong cybersecurity to protect the system from internal failures and malevolent attacks is also deeply felt[75]. A few country papers also highlights the risk that technological developments may cause unemployment[76], exclude certain groups from participating in public life and the enjoyment of public services[77], and increase national dependence on foreign technology providers[78].

Before seeing the extent to which these hopes and fears have been, and are currently being translated, into legislative texts, administrative practice, rulings by independent bodies and courts, and scholarly interpretations, we need to provide a brief snapshot of the sectors that are mostly affected by these changes and the technologies involved.

6.2. The Sectors and the Technology Involved

While all our reporters agree that their national administrations (i.e., the government, agencies, local administration, specialised bodies) are increasingly relying on algorithms in their daily operation, almost all of them also note how

[70] See the papers on Czech Republic, Hungary, Lithuania, Poland and Turkey.
[71] See the papers on Lithuania, Serbia and Turkey.
[72] See the papers on Slovenia and Turkey.
[73] See the papers on Albania, Bulgaria, Latvia, Poland, Romania, Serbia and Slovenia.
[74] See the papers on Albania, Bulgaria, Cezch Republic, Latvia, Poland, Romania and Serbia.
[75] See the papers on Albania, Bulgaria, Hungary and Poland.
[76] See the paper on Czech Republic.
[77] For instance, the authors of the papers on Hungary note the risk of exclusion of certain age groups, while the authors of the paper of Albania highlight the risk of discriminatory and exclusionary outcomes for Roma and Egyptian minorities in the country.
[78] See the paper on Hungary.

hard it is to collect consistent data about the precise state-of-the-art of the technological advancement, the technologies that are being used, and who develops them and how.

We can nevertheless say something about the sectors that currently seem to be most affected by the digitisation and automation wave. As can be seen from the table below, almost everywhere the turn to the digital state has generated the establishment of a unique digital citizen identity and of online, semi-centralised portals whereby people can directly access data and documents, obtain certificates and licenses, and manage registration, enrolment, and similar processes. Besides these, other sectors that have been seriously touched by the digital turn are those in which public officials typically have little to no discretion: payment of taxes, disbursement of welfare benefits, automation of transportation services and issuance of fine tickets for certain traffic violations. This is hardly surprising: after all, as the Latvian reporter notes, automated traffic lights may be considered general administrative acts and therefore a proto-form of automated decision-making. Less widespread, but still noticeable, are experiments with digital and smart technologies in the fields of internal security and border management, education, agriculture, work and health. As the table below shows, experiments with the algorithmic state in non-EU countries cover many more fields than in EU countries. Worth mentioning is also the project, launched by the Albanian government, of using AI for approximating national legislation to the EU's *acquis communautaire*.

	EU									Non-EU		
AREAS	**BG**	**CZ**	**HR**	**HU**	**LT**	**LV**	**PL**	**RO**	**SL**	**AL**	**RS**	**TR**
relationship with citizens	x	x	x	x	x	x	x	x	x	x	x	x
certificates and licences	x		x	x		x	x			x		x
tax	x	x	x		x	x	x		x	x	x	x
welfare			x		x					x		x
transportation and traffic	x	x			x	x	x	x		x	x	x
crime and border management	x	x		x			x			x		x
education	x	x					x			x	x	x
agriculture				x			x		x		x	x
work							x					
health							x				x	x

Table 1: Sectors mostly affected by the current digital turn (authors' elaboration)

Even harder is to understand the technologies that national public administrations are relying on, for what purposes, and how these are developed. Yet, a few papers highlight specific challenges and opportunities in this regard that deserve to be mentioned. Some reporters for instance highlight the difficulty of deploying text-based AI technologies in countries whose national language has a limited number of speakers and small linguistic corpora in digital forms[79], even though many efforts are currently being done in this direction[80]. Others note that the development of IT tools, software and applications mandates strong cooperation with private (and sometime foreign) companies[81]. While such cooperation has in some cases (such as in Bulgaria, Poland and Turkey) fostered innovative public-private partnership, in other cases it has led to the nationalisation of the company involved, as happened in Hungary.

6.3. The Algorithmic State and Statutory Law

When one reads the country papers herein collected, the general impression is that the above transformations have occurred quite independently from formal changes in the legal infrastructure governing public administration.

Let us be clear. In many countries, legislatures have been active on the matter, creating a thick layer of Acts and Regulations dealing with the establishment and management of e-government and the digital state. General statutes on e-government and digitisation of public administration have been enacted, for instance, in Albania, Bulgaria, Croatia, Hungary and Serbia[82].

[79] See the papers on Bulgaria and Hungary.

[80] In March 2024, the Bulgarian Institute for Computer Sciences, Artificial Intelligence and Technologies (INSAIT) unveiled BgGPT, the first open-source language model specifically adapted to the Bulgarian language; INSAIT has encouraged Bulgarian public administration to adopt BgGPT.

[81] See the papers on Albania, Bulgaria, Cezch Republic, Hungary, Poland, Serbia and Turkey.

[82] In Albania, see the Law on Electronic Communication of 2008, the Law on Electronic Identification and Trusted Services of 2015, the Law on Electronic Governance of 2023; in Bulgaria, see the E-Government Act of 2007; in Croatia, see the Act on State Information Infrastructure of 2014; in Hungary, see the Act of 2015 on the General Rules of Electronic Administration and Trust Services (GREATS) and the Digital State Act of 2023; in Serbia, see the 2018 Law on

Specific rules prohibiting or allowing automated decision-making in administrative matters exist in a few jurisdictions[83]. Yet, in the majority of the countries surveyed (if not in all of them), legislatures have so far refrained from intervening broadly on the standards and procedures for relying on algorithms and AI (while, almost everywhere, the void has been filled by the governments' adoption of strategies, programmes and national plans). Experiments with algorithms and AI are for the time being governed by the statutes on e-administration, where available, and by the pre-existing general rules on how administrative decisions are made, what their contents and requirements are, and what rights their addressees have[84]. These rules have largely remained the same as they were before. In other words, in the majority of the countries surveyed (if not in all), the rules applicable to administrative acts and actions (e.g. in terms of privacy, cybersecurity, quality of the datasets, impact assessments, transparency duties, right to explanations, right to review/ remedy) derive from pre-existing, technology-neutral norms.

On the one hand, this choice seems to be very wise, since technology evolves too rapidly for legislatures and governments to run after it. On the other hand, this implies that much of the current development is left in the hand of the more or less open, more or less restrictive readings that public authorities, courts, employees, and scholars will give to pre-existing texts.

For instance, the paper on Bulgaria states that "[t]here are no overarching legal requirements concerning privacy, impact assessments, transparency duties, right to access codes, etc., that apply to the reliance on algorithmic automation/AI by public administration. Bulgarian legislation does not even impose any legal prohibitions on the use of algorithmic automation or AI by

Electronic Administration. In both Serbia and Turkey, a draft AI Bill, largely imitating the EU AI Act, is currently being discussed.

[83] For instance, in Bulgaria many regulatory texts provide for the use of automation and AI in some specific sectors. In Latvia statutory law expressly prohibits the use of automated individual decision-making in criminal proceedings, but expressly allows automated decision-making for the issuance of administrative fines in traffic and tax-related matters; a 2024 amendment is about to prohibit the use of machine learning in cases on administrative offences. In Lithuania automated administrative orders for traffic and tax violations are authorised by a law of 2019.

[84] This is explicitly emphasised in the papers on Bulgaria, Croatia, Hungary, Latvia, Poland, Serbia and Turkey.

public administration. Instead, the requirements for reliance on algorithmic automation/AI are dispersed across various legal acts and refer predominantly to quality of datasets, protection of personal data, cybersecurity and security of the systems and their contained data"[85]. Similarly, the Croatian reporters stress that the Croatian General Administrative Procedure Act of 2009 does not provide for adjudication in administrative matters being made by algorithms and AI. They conclude that "[a]lthough there is no general legal regulation allowing this, numerous provisions of the General Administrative Procedure Act speak in favour of it", but also add that rules in the same Act mandating public administrative bodies to respect the principle of material truth and the principle of cooperation with the interested party "will in many cases prevent the use of algorithms and AI in the adjudication of administrative matters"[86]. More concisely, the Latvian reporter states that the Latvian general Administrative Procedure Law of 2001 "neither provides for nor prohibits the use of automated decision-making systems in determining administrative acts"[87], and thus leaves the matter entirely open to interpretation.

The result of such situations is that, for the time being, the conditions and limits under which the public administration can resort to algorithms, automation and AI, as well as the legal requirements applying to the reliance on technology by the administration and the rights of the addressees, remain quite unclear. In almost the entire region, this uncertainty has yet to be addressed by interpretive formants – i.e., courts and scholars.

While in some countries there is lively debate on when and how public administration can rely upon algorithms and resort to automated decision-making[88], many reporters raise concerns about the lack of interest in local scholarship for issues concerning the algorithmic state[89]. Moreover, in the absolute majority of the countries surveyed, the rise of the algorithmic state has so far generated no litigation. Under section 3, we saw that independent authorities and courts in the United States and in Western Europe have been asked many questions, concerning for instance the

[85] See the paper on Bulgaria.
[86] See the paper on Croatia.
[87] See the paper on Latvia.
[88] See for instance the paper on Croatia, Czech Republic, Latvia, Poland, Slovenia and Turkey.
[89] See for instance the paper on Albania, Bulgary, Hungary and Serbia.

standard of algorithmic transparency, the right to access underlying codes, and the extent to which mandatory human supervision is necessary in automated procedures. Nothing similar, for the time being, has occurred in the countries covered by this issue. The paper on Poland reports about a 2018 decision by the Polisch Constitutional Tribunal[90] in which the labour law provisions mandating the automated profiling of unemployed persons by labour offices were held to be uncostitutional inasmuch as no appeal against the automated profiling was possible[91]. The paper on Bulgaria mentions a few challenges brought against automated traffic penalty tickets issued by stationary devices, explaining how such litigation has given the occasion to Bulgarian authorities and courts to specify what automated decisions are, when they can be issued and under what conditions[92]. The paper on Serbia states that the legality of the use of the so-called 'Hawk Eye' program by police in the city of Belgrade for assessing compliance with traffic rules is currently being questioned before the Serbian Constitutional Court; the case is still pending[93]. The paper on Slovenia highlights that the practice of relying on automated decisions on taxpayers' presumed income by the Slovenian tax authorities is very likely not compliant with current legal requirements and would not stand a challenge in courts; however, the reporters also not that nobody so far as proposed such challenge[94]. Even more tellingly, the paper on Albania notes that, notwithstanding a significant data breach in 2021, in which data, including personal and sensitive information such as health records, family details, political affiliations, religious beliefs and ethnicity, of almost one million Albanians, was leaked, no complains or litigation ensued.[95] Perhaps this is an area where we can most expect some interesting developments to happen in the years to come.

[90] Judgment of the Constitutional Court of Poland, 6 June 2018, file no K 53/16.
[91] See the paper on Poland.
[92] See the paper on Bulgaria. See also the papers on Hungary and Turkey, which mention some decisions by independent data protection authorities on uses of technology by private actors.
[93] See the paper on Serbia.
[94] See the paper on Slovenia.
[95] See the paper on Albania.

ARTIFICIAL INTELLIGENCE AND THE STATE FROM A COMPARATIVE PERSPECTIVE

*Roberto Scarciglia**

Abstract

The extensive literature on artificial intelligence (AI) frequently explores its relationship with state systems, a topic dense with issues touching on different areas of law and the organisation of public authorities, both from the perspective of domestic law and on a comparative level. In the context of legal comparison, there are obvious difficulties in addressing this subject, since the public policies and regulatory solutions adopted in different legal systems often appear to be similar, without actually being so. This article highlights key variables within legal systems that have a bearing on the development of AI and the theoretical construction of an 'algorithmic state'. It further demonstrates that, in addition to traditional research methods, a quantitative approach relying on global indicators and interdisciplinarity can be useful in exploring the relationship between public law and AI from a comparative perspective.

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1. Introduction

The geometrical expansion of the role of artificial intelligence (AI) is transforming legal reality, the structure of public institutions, and society, indeed the very idea of the state, which comes to be defined (from this perspective) as the "algorithmic state". This is a true revolution, marked by a shift from Information Technology (IT) to AI in just a few years.

Language is the first issue to be addressed when dealing with the relationship between the state and AI. Algorithms have a different language from that of law. This may sound obvious because the broad debate on the legal consequences of AI technologies has repeatedly laboured the point. And yet, while increasingly advanced forms of digital colonisation require us to 'submit to linguistic rules without being aware of them', there are also linguistic rules of a purely technical nature – as in the case of AI – that are 'unknown by most'[1]. Moreover, definitions in the sector are varied and do not always fully overlap[2]. If we can define the concept of 'state' within the framework of constitutional law, the same cannot be said for that of 'algorithm', a term used by legal scholars and in more recent case law, with different and sometimes conflicting meanings[3]. The same uncertainty applies to the definition of 'AI'. The quality of human 'intelligence' if applied to technology and machines is not clearly defined[4].

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[1] R. Sacco, *Il diritto muto. Neuroscienze, conoscenza tacita, valori condivisi* (2015) 7.

[2] See, for example, the EU AI Act (according to which the term 'artificial intelligence system' (AI system) means a system designed to operate with a certain level of autonomy and that, based on machine and human-provided data and inputs, infers how to achieve a given set of human-defined objectives using machine learning and logic- and knowledge-based approaches, and produces system-generated outputs such as content (generative AI systems), predictions, recommendations or decisions, influencing the environments with which the AI system interacts) and the U.S. National Artificial Intelligence Act of 2020 (where the expression 'artificial intelligence' means a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments); see also the House of Lords' Select Committee on Artificial Intelligence in the UK (according to which AI systems are technologies with the ability to perform tasks that would otherwise require human intelligence, such as visual perception, speech recognition, and language translation).

[3] See D. Baldini and M. de Benedetto, *The open texture of algorithm in legal language*, AI and Soc 1 (2024), at <https://link.springer.com/article/10.1007/s00146-024-01925>, last accessed 23 September 2024.

[4] Some definitions in A.M. Turing, *Computing Machinery and Intelligence*, LIX 236 Mind 433–460 (1950). See also S.M. McJohn, *Review of Artificial Legal Intelligence*

A second preliminary consideration seems necessary. At this early stage in the development of AI-driven algorithms, a comparative analysis relating to different legal systems is not entirely conceivable. As a result, researchers who attempt to engage in a comparative exercise such as this may only be able to provide their personal opinions on the matter. Consequently, in this case, interpreting foreign law may necessarily mean distorting it[5]. In addition, the varying degrees of development and use of AI could also affect judicial interpretation. From this perspective, it would be interesting to study the impact of new technologies on the most recent case law and to highlight any differences arising from the various intersections of AI with the legal training and mindset of judges[6].

All these problems require the selection of comparative approaches suited to macro-comparative research on the state and AI. One of the main reasons traditional comparative approaches may fail in this field is the lack of knowledge of the technical foundations on which the most advanced technologies operate and the various factors influencing the development of AI in each legal system. How could a jurist, without the support of other experts, explain the transition from IT systems to AI systems on a technical and functional level?

The inter- and multi-disciplinary nature of this paradigm shift creates substantial uncertainty, further fuelled by the frequent opacity of algorithms and the many risks involved in using this technology. To venture into a comparative analysis that goes beyond a merely descriptive and linear approach, it is desirable for legal scholars engaged in AI-related comparative research to develop a new disciplinary perspective and adopt new forms of methodological pluralism. Yet, these new directions in legal comparative analysis – and especially in numerical and empirical

12 Harv. L. Techn. 241–248 (1998); A. Newell & H.H. Simon, *Computer science as empirical inquiry: Symbols and search*, 19(3) Common 902–915 (1976); E.L. Rissland, *Artificial Intelligence and Law: Stepping Stones to a Model of Legal Reasoning*, 99 Yale L. J. 1957–1981 (1957).

[5] See B. Fekete, *Studying Central European Laws through the Legrand Perspective: Using the Negative to Approach the Different* (Dec. 17, 2023), at <https://ssrn.com/abstract=4667018>, last accessed 23 September 2024. For this perspective, see P. Legrand, *Negative Comparative Law* (2022).

[6] See, for example, J. Frankenreiter & M.A. Livermore, *Computational Methods in Legal Analysis*, 16 Ann. Rev. L. & Soc. 39 (2020); H. Surden, *Artificial Intelligence and Law: An Overview*, 35 Ga. State U. L. Rev. 1305 (2019).

comparative law – do not always find favour with older comparativists, who may be unwilling to embrace change.

This essay is divided into two main parts. Section 2 is devoted to the most suitable methodologies for a comparative analysis of the relationship between the state and AI, emphasising comparison by difference and quantitative analysis. Section 3 examines the relationship between public structures and AI through the emergence of new relevant variables in constitutional and administrative law. Section 4 will draw some conclusions.

2. Methodological Approaches and Variables

When embarking on a comparative study, a legal scholar always wonders which methodology to use. Without entering into the debate between old and new methodological approaches, one can nevertheless observe that the interdisciplinary nature of the subject, i.e., the relationship between algorithms and public law, will necessarily have an impact on both the composition of the research team – which cannot be made up solely of lawyers – and the methodology to be followed. This conclusion is now dictated by the increasing development of science in the 21st century, the acceleration of transnational and global phenomena, and the transformation of legal thinking. But that is not all.

To better understand the perspectives and adherence to regulatory models by the states in Central and Eastern Europe, it is perhaps necessary to begin with a historical analysis. As will be seen in the next section, history is crucial to understanding the recent evolution of a form of state and government in the region. Central and Eastern Europe today is an ideal place for comparative legal research because of the variety of constitutional designs of the state, the geographical breadth of its territory, and the historically high degree of differentiation within it, as well as the heterogeneous levels of development between and within the countries belonging to the region[7].

The historical perspective is necessary to understand the contexts in which various factors have influenced the development of new technologies, below and beyond official programmes, regulations, and declarations of intent. However, such a historical

[7] See S.P. Ramet & P. Wagner, *Post-socialist Models of Rule in Central and Southeastern Europe*, in S.P. Ramet & C.M. Hassenstab (eds), *Central and Southeast European Politics since 1989* (2nd ed., 2019) 26–56.

study should aim to understand the mindsets (*mentalités*) behind the similarities and differences between national experiences, rather than proceed in a purely descriptive and linear manner. The study of legal phenomena without taking into account their socio-historical and economic context inevitably leads to a superficial and purely positivist analysis, unable to dig beneath the surface of programmes, regulations, and declarations of intent, and is especially unable to explore the 'dark side of algorithms'. Yet, as noted above, the historical method is only one of the necessary ingredients in the methodological recipe for comparison; other methodological approaches can – and perhaps should – be used in comparative research[8]. Methodological pluralism[9] and inter- or multidisciplinary approaches[10] help to improve a researcher's understanding and could lead to a 'deep-level comparison'[11].

Space does not permit a detailed examination of the old and new methodologies available for comparative research; our focus will be on selecting the legal and extra-legal variables that may be most relevant. It must be stressed, however, that traditional comparative methodologies are increasingly becoming inadequate for comparative analysis, especially given the potential use of data science, big data, and the collaboration between experts from different disciplines[12]. Technologists are opening up new frontiers, using algorithms, data mining, and machine-learning to make it possible to examine large amounts of data and discover new models[13]. This presents a revolutionary opportunity compared to

[8] Among others, see M. Siems, *New Directions in Comparative Law*, in M. Reimann & R. Zimmermann (eds), *The Oxford Handbook of Comparative Law* (2nd ed., 2019), 852–854; J. Husa, *Traditional Methods*, in M. Siems & P. Jen Yap (eds), *The Cambridge Handbook of Comparative Law* (2024) 15–31.

[9] See G. Midgley, J. Nicholson, R. Brennan, *Dealing with challenges to methodological pluralism: The paradigm problem, psychological resistance and cultural barriers*, 62 Ind. Mark. Man. 150 (2012); M. Oderkerk, *The Need for a Methodological Framework for Comparative Legal Research: Sense and Nonsense of 'Methodological Pluralism' in Comparative Law*, 79(3) *RabelsZ* 589 (2015); D. della Porta & M. Keating, *Approaches and Methodologies in Social Science: A Pluralist Perspective* (2008).

[10] Generally, J. Husa, *Interdisciplinary Comparative Law*: *Rubbing Shoulders with the Neighbours or Standing Alone in a Crowd* (2022).

[11] M. Siems, *Comparative Law* (3rd edn, 2022) 143–145.

[12] See A. Riles, *From Comparison to Collaboration: Experiments with a New Scholarly and Political Form*, 78 Law & Contemp. Probs. 147–183 (2015).

[13] B. Custer, *Methods of data research for law*, in V. Mak, E. Tjong Tjin Tai, A. Berle (eds), *Research Handbook in Data Science and Law* (2nd ed., Cheltenham, UK, and Northampton, MA: Edward Elgar 2018) 355–377.

the traditional practices of comparative law[14]. These approaches broaden the scope of comparative law through its intersection with other sciences and allow data and their features to be framed from non-legal perspectives[15]. From this point of view, it would be interesting to know whether such projects exist in the legal systems analysed in this special issue: their purposes, how they are financed, and what AI tools are used.

Legal and extra-legal variables are another element to be considered from a comparative perspective. Their heterogeneous presence fuels the differences between legal systems, even in the presence of common problems in the construction of AI systems and in the choice of the regulatory model to follow (the one adopted in Europe or the one adopted in other countries, such as the United States and China?).

The study of these variables needs an empirical methodology to quantify variations within the different legal systems, particularly for some legal rules. This methodology could help to assess these rules on how and to what extent AI can be developed, particularly in constitutional and administrative law. The resulting indices make it possible to correlate indicators relating to specific aspects of legal rules and institutions with the relevant variables.

From this point of view, it is possible to consider at least three sets of problems. The first concerns the technical and scientific choices underlying the indicators to be used, their origin and classification, their comparability, and their elements. A second problem concerns the search for the so-called relevant variables and their relationships, both within a legal system and in the transnational perspective. The third problem stems from the well-known limitations of so-called quantitative comparison and the use of indicators, especially for comparative public law research, and the study of the relationship between AI and states[16].

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[14] Consider Mathias Siems' analysis of new methods in legal comparison, such as 'numerical comparative law' (taking into account different types of quantitative legal information) and 'empirical comparative law' (enabling a relationship between independent and dependent variables). See M. Siems, cit. at 11, 207–285.

[15] In this regard, see A. Stazi, *'Legal Big Data': From Predictive Justice to Personalised Law?*, 2 Comp. L. Rev. 140 (2020); R. Michaels, *Transnationalizing Comparative Law*, Maastr. J. & Eur. Comp. L. 352 (2016); H. Spamann, *Empirical Comparative Law*, Ann. Rev. L. & Soc. Sc. 131 (2015); J.C. Reitz, *How To Do Comparative Law*, 46(4) Am. J. Comp. L. 617 (1998).

[16] From the extensive bibliography on the issue, see P.G. Monateri & M.

When embarking on a quantitative study in comparative law, the first step is to define the units and the variables that will make up the data set. The challenge is to find a set of meaningful variables that are also manageable for the researcher or research team. In the next section, I will define some of the variables that may influence the regulatory choices of different legal systems regarding the construction and development of AI systems, referring to the main problems concerning AI applied to constitutional and administrative law.

We will first consider some variables related to the constitutional and political system, selecting national variations in the essential elements of constitutional democracy. Starting from Legrand's idea that it is not possible to know the legal phenomena of a foreign legal system in their entirety[17], I will try to identify some of the factors that give rise to differences – albeit formally based on from common principles – and that influence the transformation of constitutional and administrative structures, including the quality of governance of a democratic system. These 'biopsies' can shed light on the dynamics of the form of government and administration, and the health of liberal democracy in European legal systems.

3. Indicators, Public Law, and AI

From the outset, it is necessary to define the meaning of 'indicators', since not all instruments for legal measurement are necessarily to be considered 'indicators.' According to the OECD, the *Organisation for Economic Co-operation and Development*, an indicator is a 'quantitative or qualitative measure' derived from a series of observed facts, which may reveal a country's performance in a given subject or in a given area but can also indicate directions for change and the degree to which what is being measured conforms to certain standards[18].

In essence, indicators refer to collections of data incorporated into representative rankings of the performance of the units of analysis being studied, which can be compared synchronically and

Balestrieri, *Quantitative Methods in Comparative Law* (2023); M. Siems, cit. at 11, 207–254; M. Infantino, *Numera et Impera. Gli indicatori giuridici e il diritto comparato* (2019).

[17] In this regard, see A. Stazi, cit. at 15; R. Michaels, cit. at 15; J.C. Reitz, cit. at 15.

[18] See, for instance, OECD, *Government at a Glance 2013* (2013) 192.

diachronically. Underlying these indicators there always is 'a theory, more or less clear, more or less verbalised, more or less solid, that forms the background to the indicator'[19]. Information through numbers is easily seductive, as the same numbers convey an idea of objective truth and scientific authority, going beyond an interpretation of the elements that made their construction possible[20].

However, the belief that numbers produce truth-telling discourses, albeit functional to the power of indicators, is largely misplaced, especially if one considers that '[from] a logical point of view, the control of a theory depends on basic assertions whose acceptance or rejection, in turn, depends upon our decisions'[21]. The validity of any numerical analysis depends not only on the soundness of the theory on which it is based, but also on the organisational dimension of the project in question, the presence of an international structure, and resources available over time to keep the exercise going. Since the end of the last century, for example, the use of mammoth databases has made it possible to analyse previously unimaginable data, as in the case of Martin Gelter and Mathias Siems' research on mutual citations by judges in Europe.

In some of these cases, even quantitative studies can become indicators[22].

Be that as it may, the next section will examine some indicators of constitutional design and administrative organisation that may be useful for studying the construction of complex AI systems and understanding the objectives pursued by AI-driven developments regarding the algorithmic state. A comparative overview can help to highlight similarities and differences between the legal systems in Central and Eastern Europe.

3.1. Indicators and Constitutional Design

Debates on the regulation of AI tend to present the uncertainty of its impact in terms of risks and opportunities, taking as a reference point the current technological progress and the democratic character of the form of government. From a

[19] M. Infantino, cit. at 16, 22.
[20] S. Engle Merry, *The Seductions of Quantification*: *Measuring Human Rights, Gender Violence* (2016) 2.
[21] K. Popper, *The Logic of Scientific Discovery* (1992) 104.
[22] M. Gelter & M. Siems, *Citations to Foreign Courts: Illegitimate and Superfluous or Unavoidable? Evidence from Europe*, 62(1) Am. J. Comp. L. 35–85 (2014).

constitutional point of view, many questions remain open, giving rise to a substantial debate among legal scholars about the dangers and opportunities that advanced AI systems can offer to a democratic political system.

Among the issues that go to the heart of the constitutional design of a democratic form of government, the following areas can be identified[23]:

a) Protection of fundamental rights: How can AI be used to protect civil liberties and protect minorities?

b) Rule of Law: How can AI be used to monitor compliance with the law and constitutional procedures and at the same time to make them more transparent?

c) Separation of powers: What is the potential of AI applications for legislative, executive, and judicial powers?

d) Popular sovereignty: How can AI support political decision-making and democratic participation?

The answer to these questions can vary across the legal systems on which this issue focuses. Governments may rely on advanced technology systems to guarantee the same constitutional principles (or to realise their more or less covert breach). Moreover, these increasingly advanced AI tools operate within national legal systems and beyond national borders through decisions that challenge legal principles and practices of precaution and accountability[24].

While the guarantee of constitutional rights and public freedoms is an expression of the democratic principle and is part of the common heritage of systems in the liberal-democratic tradition, there has long been some disengagement from these principles. The construction and use of AI systems could contribute to both disengagement and re-engagement. In this regard, the indicators in this paper can give us useful information about the constitutional and administrative design, on which the foundations of an algorithmic state are laid, of the twelve countries covered in this

[23] The proposal of these questions is in a report by N. Horn & M. Binder, *Democracy and AI: How Technological Progress Can Strengthen Democratic Structures* (2024) 10. Generally see O. Pollicino and G. De Gregorio, *Constitutional Law in the Algorithmic Society*, in H.-W. Micklitz et al (eds), *Constitutional Challenges in the Algorithmic Society* (2021) 1–22.

[24] See M. Petersmann, J. Dehm, K. Birrell, A. Akhtar-Khavari, *Law and the Inhuman Introductory remarks*, (12 Sep 2024) Crit. Leg. Thinking, at <https://criticallegalthinking.com/2024/09/12/law-and-the-inhuman-introductory-remarks/>, last accessed 23 September 2024.

special issue. According to Mauro Bussani, indicators 'present themselves as allegedly descriptive tools' whose effects 'show how description is always combined with a prescriptive component. [...] Through their quantitative 'comparison', indicators inject into technical and public debates not only variously accurate information [...], but also visions about current and ideal scenarios, relevant problems, goals to be pursued, and ways to achieve them'[25]. From this point of view, I have chosen a few indicators, among the many published, that may be useful in describing the constitutional design within which projects for AI system regulation and development are beginning to be defined.

The first indicator (Table 1) is 'Freedom in the World 2024', an annual report produced by the non-governmental organisation Freedom House, which measures the degree of freedom and recognition of political rights worldwide. The score ranges from 100 (indicating the highest level of recognition of freedoms) to zero (indicating their total absence). The score is based on many parameters, including political rights, political pluralism and participation, the functioning of government, civil liberties, rights of association and organisation, Rule of Law, personal autonomy, and protection of individual rights.

Table 1 – *Freedom in the World* Report 2024 – Global Freedom[26]

	Rank	
Slovenia	96/100	(free)
Czechia	94/100	(free)
Latvia	88/100	(free)
Lithuania	89/100	(free)
Romania	83/100	(free)
Croatia	83/100	(free)
Poland	80/100	(free)
Bulgaria	78/100	(free)
Albania	68/100	(partly free)
Hungary	65/100	(partly free)
Serbia	57/100	(partly free)
Turkey	33/100	(not free)

As these figures show, there are significant numerical differences between the countries in Table 1, particularly between

[25] M. Bussani, *Introduzione al diritto comparato. Un breviario della globalità* (2022) 95 (author's translation).

[26] See <https://freedomhouse.org/countries/freedom-world/scores>, last accessed 23 September 2024.

those with a high degree of freedom (Czech Republic, Latvia, Lithuania) and those with variously serious critical issues. In this case, it may be interesting to know in which direction AI is being developed and which regulatory model is being used as a reference or source of inspiration for the transplantation of structural elements – that of the European Union, the US, or China. The latter two experiences in the development of AI are usually considered more advanced in regulating artificial intelligence compared to that of Europe, which is considered a 'weaker' actor[27].

The model chosen by the European Union is based on the harmonisation of regulations on AI in the Member States, as reflected in the *AI Act* of 2024[28] and the *Ethics Guidelines for Trustworthy AI* of 2019[29]. However, as happens with legal convergence, it is necessary to distinguish between the objects of regulatory provisions and the processes by which these processes are translated into action. Indeed, it is not certain that convergence – based, for instance, on a European Union regulation – will have the same effects everywhere. The impact of harmonisation depends on variables that are different in each legal system and are integrated in different ways. One of these variables is undoubtedly the democratic nature of a system that can use AI to develop citizens' rights but also limit their scope by using technology in a functional sense, as might happen with an autocratic government that secures a parliamentary majority to impose any decision or form of regulation.

Undoubtedly, the relationship and interaction between AI and democratic systems is particularly complex, arising from the confrontation between the deliberative processes of democratic traditions on one hand and the claim to absoluteness of the supposedly objective mathematical processes of algorithms on the other. Like any technology, AI can be used to promote constitutional freedom, but also to suppress politically undesirable opinions or to score the population in favour of the government. It than therefore be interesting to understand the quality of

[27] See e.g. M. Timoteo, B. Verri, Y. Wang, *Guidelines for Artificial Intelligence: Comparing the European and Chinese Approaches*, 2 China & WTO Rev. 306 (2021).
[28] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence.
[29] European Commission, *Ethics Guidelines for Trustworthy AI* (2019), at https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai, last accessed 24 September 2024.

democracy and state organisation in its relationship with citizens within legal orders and the significance of these principles for AI systems. To address this, it may be useful to consider another indicator, the *Economist Democracy Index* (Table 2). The *Economist Democracy Index* is a quantitative index that measures the quality of democracy and democratic institutions in 165 States and territories, distinguishing between full democracies, imperfect democracies, hybrid regimes, and authoritarian states. The indicator's definition of 'imperfect democracy' for many countries refers to nations where elections are free, and basic civil liberties are respected. However, there are also critical problems in the functioning of institutions, such as breaches of the freedom of information and other important aspects of democratic life, including low levels of participation in political life, and problems in the functioning of government[30]. The scale ranges from 0 to 10 (from least to most democratic).

Table 2 – The Economist Democracy Index 2023

	Score	Rank	
Czechia	7,97	26	(flawed democracy)
Slovenia	7,75	32	(flawed democracy)
Latvia	7,38	38	(flawed democracy)
Lithuania	7,31	39	(flawed democracy)
Poland	7,18	42	(flawed democracy)
Hungary	6,72	50	(flawed democracy)
Croatia	6,50	58	(flawed democracy)
Romania	6,45	60	(flawed democracy)
Bulgaria	6,41	62	(flawed democracy)
Serbia	6,33	64	(flawed democracy)
Albania	6,28	66	(flawed democracy)
Turkey	4,33	102	(hybrid regime)

The first two tables show some numerical differences in the democratic structure of the countries of interest, almost all of which are characterised by imperfect democracy. This could mean that there are critical points in the functioning of a system, especially in the guarantee of fundamental rights and freedoms. The Czech Republic and Slovenia's rankings are close to full democracy, while Turkey returns a more negative score. These differences may be due to two different models of power distribution: the diffuse model,

[30] At <https://www.eiu.com/n/democracy-index-conflict-and-polarisation-drive-a-new-low-for-global-democracy/>, last accessed 23 September 2024. The indicator measures the following variables: electoral process and pluralism, civil liberties, functioning of government, participation, and political culture.

distributed among institutions that share it through checks and balances mechanisms, and the centralised model.

How could AI improve the factors analysed by this indicator?

AI systems can support people's fundamental rights and freedoms: e.g. from the protection of life to health, from privacy to the exercise of the right to vote, and from education to freedom of expression and information. However, it cannot be ruled out that AI may have negative consequences, such as the deterioration of democratic structures, and regression. For example, while AI has beneficial uses for science and institutional activity, it could also enable autocratic governments to introduce online censorship and create disinformation through AI-generated images and text that distort reality. Another arbitrary use of AI relates to the proliferation of surveillance systems which, for example, control democratic dissent through social media and facial scanning[31]. In the Freedom House report, the Freedom on the Net indicator examines the methodology used by forty-one governments worldwide to block the movement of information on the Internet. In reality, the report only analyses two countries among those included in this issue: Hungary (for blocking websites) and Turkey (for blocking on websites, restricting internet connectivity, blocking social media platforms and the use of VPNs, as well as forcibly removing online content). Beyond this indicator, it would be necessary to examine concretely whether such tools exist in other jurisdictions and what level of sophistication they can achieve.

Another perspective useful for studying the relationship between the state and AI concerns the Rule of Law and how AI could promote transparency in the actions of political bodies and adherence to constitutional procedures. From this point of view, indicators about the Rule of Law can be useful for assessing positive or negative AI developments in the public sphere. The next table is based on the *Rule of Law Index*, whose main purpose is to promote collaborative actions to strengthen the Rule of Law (Table 3). It is based on several factors, including constraints on government powers, absence of corruption, government transparency, respect

[31] At <https://freedomhouse.org/report/freedom-net/2023/repressive-power-artificial-intelligence>, last accessed 23 September 2024. See also S. Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (2018).

for fundamental rights, public order and safety, law enforcement, and civil and criminal justice[32].

Table 3 – Rule of Law Index 2023

	Rank
Lithuania	18/137
Czechia	20/137
Latvia	22/137
Slovenia	27/137
Poland	36/137
Romania	40/137
Croatia	45/137
Bulgaria	59/137
Hungary	73/137
Albania	91/142
Serbia	93/137
Turkey	117/137

The numerical differences among the indicators presented so far provide food for thought. Like medical biopsies, these results could reveal how, within each system, there are differences in the level of constitutional organisation that may inevitably affect the regulation, use, and risks associated with the development of AI.

Another important issue, closely related to the principle of the separation of powers – a cardinal principle of democratic systems – concerns the judiciary and possible criticalities arising from the reliance on AI in exercising judicial power[33]. At the beginning of section 3 above, it was noted that both the availability of legal data in digital form and the reliance on quantitative legal methods are increasing. However, in many European countries, the development of AI systems for quantitative legal analysis is still in its infancy, especially for civil and administrative law. Private companies endowed with significant financial and technological resources have initiated collaborations with institutions and individual judicial entities to build and develop systems that can use AI within the courts. It is widely believed that AI systems can be used to exercise judicial functions, assisting judges and simplifying their research and interpretation activities, even if AI

[32] At <https://worldjusticeproject.org/>, last accessed 23 September 2024.

[33] See generally K. Terzidu, *The Use of Artificial Intelligence in the Judiciary and Its Compliance with the Right to a Fair Trial*, 33 J. Judicial Adm. 154–168 (2022); T. Sourdin, *Technology and Artificial Intelligence* (2020); A. Dory Reiling, *Courts and Artificial Intelligence*, 11(2) Int. J. Court Adm. 1–8 (2020).

cannot completely replace judges or produce independent judicial decisions. In this regard, the most interesting indicator is the European Commission's recent report on justice, the *2024 EU Justice Scoreboard*, which provides a quantitative analysis of EU judicial systems from 2012 to 2022 (Table 4)[34]. The Scoreboard reports the total expenditure per inhabitant on the operation of the judicial systems during the reference period, based on the assumption that a judicial system can only function effectively if it is adequately resourced, both in terms of human resources – magistrates and officials – and in terms of investment in the technological infrastructure. Without these resources, a transitional phase from use of the current IT tools to machines using AI-driven algorithms seems unlikely. The Scoreboard covers the twenty-seven member states of the European Union and therefore does not take into account Albania, Serbia, and Turkey, which are beyond the scope of the indicator.

Table 4 – Government Total Expenditure on Law Courts in Eur per Inhabitant 2012-2022[35]

	Rank
Slovenia	9/27
Bulgaria	15/27
Poland	16/27
Latvia	17/27
Czechia	18/27
Croatia	20/27
Hungary	22/27
Romania	24/27
Lithuania	26/27

While the ranking in Table 4 refers to per capita spending on justice, the ranking for digital technology in the courts differs, as shown in Table 5. The results presented below raise the question of which variables (e.g., the form of government, the guarantee of constitutional principles, as well as the objectives of building digital systems and AI regulations) influence the scores of the countries analysed – a question that must be addressed from a comparative perspective.

[34] European Commission, *2024 EU Justice Scoreboard*, at <https://commission.europa.eu/document/download/84aa3726-82d7-4401-98c1-fee04a7d2dd6_en?filename=2024%20EU%20Justice%20Scoreboard.pdf>, last accessed 23 September 2024.

[35] European Commission, cit. at 34, Figure 33, 37.

Table 5 – Use of Digital Technology by Courts and Prosecution Services 2023

	Rank
Slovenia	9/27
Hungary	10/27
Latvia	11/27
Lithuania	12/27
Croatia	16/27
Poland	17/27
Romania	18/27
Bulgaria	24/27
Czechia	26/27

It would also be interesting to compare this data with data concerning some courts in non-European countries, such as, for example, the Chinese process of active digitalisation of the court system and the trends and current status of the Chinese Smart Court system. Further, the relationship between the use of AI and the independence of the judiciary remains to be tested. How can the autonomy of judges be properly protected in the construction of advanced technology systems? Are there possible regulatory approaches that could positively or negatively affect this principle?

Another structural element in the constitutional design of a democratic form of government is the political participation of the citizens. It may be useful in this regard to refer to an indicator, the *Political Participation Index, 2023* (Table 6), which records the extent to which citizens can and do participate in politics, with higher values indicating more participation (1 to 10)[36].

Table 6 – Political Participation Index 2023

	Score
Slovenia	7,22
Czechia	7,22
Poland	6,67
Serbia	6,67
Croatia	6,11
Lithuania	6,11
Turkey	6,11
Latvia	6,11
Romania	5,56
Bulgaria	5,56
Albania	5
Hungary	4,44

[36] At <https://ourworldindata.org/grapher/political-participation-index-eiu>, last accessed 23 September 2024.

This indicator also signals large numerical differences and raises many interesting questions. One of these is whether AI-based technologies can change the political balance within states by promoting broader forms of political participation not only in electoral contexts, or whether AI can lead to regressive phenomena that could limit participation. When considering the use of advanced technologies as a tool to improve participatory processes, it may also be useful to measure the communication and organisational processes between citizens and public institutions and, in particular, the conditions for political participation, the contribution of the media in supporting participation, and citizen participation in public hearings aimed at AI regulation[37]. From this point of view, it is possible to reflect on the lowest scores in Table 6 and question whether they indicate a potential deterioration in the form of government. While all this demonstrates the explanatory potential of the indicator, it is important to emphasise, from the standpoint of methodological pluralism, that other approaches can complement quantitative methods in analysing the ways and means of building AI systems.

3.2. Indicators and Administrative Organisation

These brief considerations on the constitutional principles that the regulation of advanced technologies takes into account highlight the possible links between technological developments and the varyingly democratic nature of the form of government to which the form of administration is closely related. The application of AI to the institutions of administrative law and the organisational structures of public administration are being studied in various parts of the world. In particular, recent research carried out by the Council of Europe has identified the main problems posed by the development of advanced technologies to the administrations of twenty-four of its Member States. In the study, administrative decisions taken through the use of these technologies are of particular importance. In this respect, it should be made clear from the outset that this development depends on the technology available to public administrations, which may be either simple or

[37] See W.L. Bennett, A. Segerberg, C.B. Knüpfer, *The democratic interface: technology, political organization, and diverging patterns of electoral representation*, 21(11) Inf., Comm. & Soc'y 1657 (2018).

complex[38]. Some essential issues are linked to the technological structure, ranging from the processing of algorithms to the data taken into account for the decision, from the selection of these data to liability for the administrative decision[39]. In addition, when advanced technological systems are used, other critical issues arise in cases where the machine-learning mechanism allows the algorithm to evolve autonomously. From this point of view, there are also problems related to the transparency of the administrative process and the participation of the parties concerned.

Also, from this perspective, it may be useful to present some contextual indicators that could serve as elements for reflection on the development of the algorithmic 'administrative' state. The emergence of AI and digital technologies is inevitably having an impact on public administration, influencing several aspects such as:

a) the administrative function;
b) administrative discretion;
c) impartiality, transparency, procedural fairness, reasonableness, public accountability;
d) citizen participation;
e) administrative organisation and the role of private actors;
f) administrative justice.

The above indicators cannot cover and address all these perspectives, but others can shed light on the legal systems analysed and their technical development.

One indicator of the quality of administrative action with the principle of impartiality is the *Rigorous and Impartial Administration Index*, which is part of a broader indicator of democracy (the *V-Dem - Democracy Index*), reported in 2023 (Table

[38] See J. Wolswinkel, *Artificial Intelligence and Administrative Law* (2022); W.L. Bennett, A. Segerberg, C.B. Knüpfer, cit. at 37.

[39] See, among others, O.M. Puigpelat, *The impact of the AI Act on public authorities and on administrative procedures*, 4 *CERIDAP* 238–252 (2023); C. Coglianese, *Administrative Law in the Automated State*, 150(3) Daedalus 104–120 (2021); J. Raso, *AI and Administrative Law*, in F. Martin-Bariteau & T. Scassa (eds.), *Artificial Intelligence and the Law in Canada* (2021) 182–204; A. Goudge, *Administrative Law, Artificial Intelligence, and Procedural Rights*, 42 *Windsor Rev. Leg. & Soc. Issues* 17–50 (2021); M. Finck, *Automated Decision-Making and Administrative Law*, in P. Cane et al (eds.), *Oxford Handbook of Comparative Administrative Law* (2020) 658–676; C. Coglianese & D. Lehr, *Regulating by Robot: Administrative Decision Making in the Machine-Learning Era*, 105 Geo. L. J. 1147–1223 (2017).

7)[40]. The highest value among those considered in Table 6 indicates greater compliance with the principle than is denoted by the lowest value (-2).

Table 7 – W-Dem – Democracy Index 2023 - *Rigorous and Impartial Administration Index*

	Score
Latvia	3,4
Czechia	2,5
Slovenia	1,5
Lithuania	1,1
Bulgaria	0,8
Albania	0,8
Poland	0,7
Romania	0,7
Serbia	0,7
Croatia	0,6
Hungary	0,2
Turkey	-1,4

While the form of government and the form of administration are closely linked, this indicator highlights, on the one hand, how the principle of impartiality underlying public action is implemented to a limited extent in systems with some significant criticalities in terms of the democratic standard of liberal-democratic countries (Hungary, Turkey). On the other hand, the possibility of presenting a biopsy of the autocratic state leaves numerous questions open for the construction of AI systems, which, as I have already pointed out, could be directed toward social control rather than the implementation of the democratic nature of administration. These perplexities can be clarified by analysing the regulatory acts about algorithms for administrative activity in some legal systems. Many countries have enacted ethical guidelines for the use of AI to counteract the distorted use of technology in administrative systems: suffice it to recall the EU ethical guidelines drawn up by the European Commission in 2019[41], the United Kingdom's *Guide* of 2019[42], and Canada's *Algorithmic*

[40] Our World in Data, *Rigorous and Impartial Administration Index 2023*, at <https://ourworldindata.org/grapher/rigorous-and-impartial-public-administration-index>, last accessed 23 September 2024.

[41] European Commission, cit. at 29.

[42] United Kingdom, *A guide to using artificial intelligence in the public sector* (2019), at https://www.gov.uk/government/collections/a-guide-to-using-artificial-intelligence-in-the-public-sector, last accessed 24 September 2024.

Impact Assessment of 2020[43]. What is important to note is that, while there are many ethical guidelines, there is a lack of rules regarding the operational side[44].

Another indicator that focuses on public administration is the *Corruption Perceptions Index* (CPI), which measures perceived corruption in a country[45]. This index measures the perception of corruption in the public sector in some 180 countries (only forty-one countries were included in the CPI's first edition in 1995), giving each a score ranging from 0 (highest corruption) to 100 (no corruption). In Table 8, the country is represented by an aggregate index based on interviews with various independent and accredited research institutes. The interviews relate to the abuse of power by public officials for private gain, e.g., taking bribes for public contracts, misappropriation of public funds, etc.

Table 8 – Corruption Perceptions Index 2023

	Score	Rank
Lithuania	61	34
Czechia	57	41
Slovenia	56	42
Poland	54	47
Croatia	50	57
Romania	46	63
Bulgaria	45	67
Hungary	42	76
Latvia	37	98
Albania	37	98
Serbia	36	104
Turkey	34	115

The latter indicator allows us to assume that criticism of public authorities by citizens is widespread in the countries surveyed. To some extent, the indicator provides a biopsy of the form of government and administration that the development of AI and digital technology could progressively help to improve,

[43] Canada, *Algorithmic Impact Assessment tool* (2020), at https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/algorithmic-impact-assessment.html, last accessed 24 September 2024.

[44] See also H. Surden, *The Ethics of Artificial Intelligence in Law: Basic Questions*", in M.D. Dubber, F. Pasquale, S. Das (eds.), *Oxford Handbook of Ethics of AI* (2020) 719–736.

[45] At <https://www.transparency.org/en/cpi/2023>, last accessed 23 September 2024.

strengthening the democratic resilience and functionality of the administrative organisation and the management of public services. However, the path to these results still seems far off, considering the differences and variables that can be assumed from the perspective of numerical comparative law. Although there does not appear to be any specific regulation of AI and administrative decision-making (ADM) in the twelve countries covered in this issue, it is useful to highlight that some courts have introduced principles to guide administrative authorities. For instance, this is the case of the Czech Republic (where principles of reason-giving, the prohibition of abuse of power and administrative discretion, and the principle of protection of the public interest, are included) and of Lithuania (where the principles recognised include the right to be heard, the principle of proportionality, non-discrimination, equality of arms, the right to be duly informed of one's rights and legal status, the right to evidence-based process and adversarial proceedings)[46]. This is the first stage of a regulatory process that can balance the advantages and disadvantages of building digital platforms to serve the articulation of public powers and democratic participation of citizens while respecting constitutionally guaranteed rights and freedoms.

4. Concluding Remarks

In this short paper, I have tried to highlight some problems related to the relationship between the state and AI by doing some preparatory work for macro-comparative research on a number of Central and Eastern European countries. This work highlights several obstacles that complicate comparative research in this area. It seems obvious that any comparative study of this kind should be interdisciplinary, notwithstanding the doubts of many legal scholars about the relationship between law and other sciences. In the case of AI, it is clear that, in the regulation and construction phase of advanced technological systems at the service of government action and public administration, these forms of intellectual closure must be replaced by collaboration with experts in computer sciences and digital technology.

Dialogue between scholars and experts from different disciplines and belonging to different legal traditions is certainly

[46] See J. Wolswinkel, cit. at 38.

complicated not only by the languages of foreign countries but also by the fact that the language of law differs from that of digital technology. Concepts such as, e.g., 'artificial intelligence,' 'algorithm,' or 'predictive justice' are not clearly defined within and across legal systems, not least because of the limited knowledge of the scientific basis on which the most advanced technology is developing. Consequently, researchers who undertake this task without adequate human and technological resources run the risk of providing only their point of view and, as a result, a limited understanding, which, in some cases, may even distort foreign law[47].

From a comparative law perspective, the choice of methodology for this type of analysis is crucial. Central and Eastern European countries are today an ideal place for comparative law research, due to their diversity of national constitutional designs and histories. Most countries in the macro-region have embarked on paths of transition and departure from the patterns of Socialist law, repositioning themselves from the role of the 'West of the East' to that of the 'East of the West' through 'a process of transformation whose depth and significance defy the discursive boundaries of a simple systemic transition.'[48] What contribution can the construction of AI systems make to this process? The answer is certainly not simple and depends not only on political, social, economic, and technological variables but also on the forms of regulation of advanced technology implemented by the European Union and other transnational actors. The indicators presented show critical issues and differences, even substantial ones, in relation to constitutional design and administrative organisation. At this early stage of development there are, in my opinion, many challenges to conducting a thorough comparison, even across differences, due to the many variables that make each legal system distinct and unique. This is probably one of the great challenges for the future of comparative law(s) and the progressive discovery of 'the algorithmic state'. Can we speak of a new form of state, or is this merely a sliding door for the future?

[47] See P. Legrand, *Le droit comparé* (5th edn, 2015) 408.

[48] S. Rácz & I. Egyed, *From the "West of the East" to the "East of the West": The postsocialist economic and structural transition of Central and South-Eastern Europe* 15(2) Deturope 10 (2023).

NAVIGATING THE ALGORITHMIC SHIFT AND THE LEGAL IMPLICATIONS OF ARTIFICIAL INTELLIGENCE IN ALBANIA'S PUBLIC ADMINISTRATION

Eralda (Methasani) Çani and Andrea Mazelliu***

Abstract

The use of Artificial Intelligence (AI) in public interest governance and by public authorities, as an innovative system, is attracting real attention. It is being discussed as advantageous due to its ability to increase the efficiency and transparency of public services, while still questioning the roles and functions of the public administration in society. Considering that AI includes aspects of machine learning, rule-based decision-making, and other computational techniques, critical issues such as the legitimacy of AI empowerment for making decisions, as well as accountability, transparency, data protection and privacy, and the protection of fundamental rights, are key to such deliberations.

The literature has paid much attention to these, while advancement is also seen in levels of policy-making and legislation. Albania has demonstrated active progress in making use of the digitalisation of public services, notably through the e-Albania portal, and it is taking steps, including through the legal tier, towards the development of AI governance standards, including addressing the ethical challenges posed by algorithmic decision-making.

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This paper reviews trends in AI governance, offering a comparative analysis of how different jurisdictions regulate the intersection of AI and public services. It also provides an overview of the Albanian legal framework, also in relation to the European Union regulations. It does not address the legitimacy of AI use in public administration. While the latter is an aspect of a well-deserved consideration, this paper focuses on understanding developments in policy-making and legislative regulations, including the current state of play, algorithmic automation, and AI usage by the public authorities in Albania. It also tries to shed light on the implementation of algorithmic automation and AI usage in the Albanian public administration and public services.

The public services provided through algorithmic automation and the introduction of AI has raised several concerns when in terms of transparency, the protection of personal data, the quality of data sets, and areas where there is a restriction in the usage of these technologies. Following an exposure to standards of AI use in public administration and services, especially emphasising the principles that must be upheld, the paper analyses how Albania's existing legal infrastructure complies with those. Recommendations are presented for Albania to strengthen its legal framework and foster innovation while safeguarding citizens' rights and ensuring the ethical use of AI in public governance. Lastly, this paper emphasises interdisciplinary collaboration as highly important for developing a robust and ethical AI governance framework. Input from legal experts, technology experts, civil society, and the private sector will ensure that AI implementation in public administration is both innovative and able to protect citizens' rights.

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1. General Overview of the Use of Algorithmic Automation and Artificial Intelligence by the Public Administration

The landscape of laws concerning the use of AI and automated algorithms in public governance is evolving as governments have been using digital governing tools for years, and it is opening doors for the first time in decision-making. The literature has long agreed that it is essential for AI systems to be reliable, and both morally and legally compliant, particularly if used by public authorities[1]. The key principles often revolve around responsibility, openness, transparency, and moral concerns. Governments must ensure that AI and automated systems remain transparent and accountable to the public at large. Algorithmic Impact Assessment (AIA) is required to preside over the assessment of biases and to ensure fairness in automated systems[2]. Sientific societies, think tanks, NGOs, and international organisations have come to identify universal guidelines for AI (UGAI), incorporating elements of human rights doctrine, data protection law, and ethical guidelines. The guidelines include several well-established principles for AI governance and put

[1] C.M Sjöberg, *Algorithms in Public Administration*, in M. Suksi (ed.), *The Rule of Law and Automated Decision-Making* (2023) 195.

[2] D. Freeman Engstrom & D.E Ho, *Algorithmic Accountability in the Administrative State: The Challenges of AI and Machine Learning to Administrative Law* (2020), at https://law.stanford.edu/wp-content/uploads/2020/02/ACUS-AI-Report.pdf, last accessed 5 September 2024; AI Now Institute, *Algorithmic Impact Assessments: Toward Accountable Automation in Public Agencies* (2021), at https://ainowinstitute.org/publication/algorithmic-impact-assessments-toward-accountable-automation-in-public-agencies, last accessed 5 September 2024.

forward new principles not previously found in similar policy frameworks, echoing the obligations of institutions and the rights of individuals. Elements of transparency, the right to a human-made decision, obligations of identification, fairness, assessment and accountability, accuracy, and reliability, as well as validity, the data quality principle, and public safety. There are also cybersecurity obligations, a prohibition on secret profiling and unitary scoring, as well as the termination obligation, which are all identified as universal AI standards which recognise human interests at the core of the system, and human control remains fundamental to it[3].

As digitalisation and technology shape humanity's future interaction and introduce new behaviours, governments are taking initiatives to incorporate the digital world of the 21st century, including AI, into public service offerings. These innovative approaches aim to make access to public services easier and more efficient[4]. The digitisation of public services and the integration of AI, which is already a reality in various sectors, inevitably present challenges to the protection and effective exercise of the fundamental rights and freedoms guaranteed by the highest laws of every country. In a non-delegation principle in the legal context, public administrations are restricted, which means they cannot fully delegate decision-making duties to automated systems. These principles guarantee that human monitoring and control are applied to decision-making[5]. To ensure compliance with existing and sensitive legal frameworks, such as the European Union (EU)

[3] Further details at 'Universal Guidelines for AI', at https://www.caidp.org/universal-guidelines-for-ai/, last accessed 5 September 2024.

[4] The OECD states that "one of the most important and most immediately achievable benefits of AI is to change the way that public servants themselves do their jobs", resulting from the focusing on high-value instead of low-value work, thus "reducing or eliminating repetitive tasks, revealing new insights from data […] and enhancing agencies' ability to achieve their missions" (OECD, *Hello, World. Artificial intelligence and its use in the public sector* (2019) 77, at https://www.oecd-ilibrary.org/governance/hello-world_726fd39d-en, last accessed 5 September 2024).

[5] C. Langer, *Decision-making power and responsibility in an automated administration* Discov Artif Intell 4, 59 (2024), at https://doi.org/10.1007/s44163-024-00152-1, last accessed 5 September 2024.

GDPR regulatory framework[6], governments can test the automation systems by means of sandboxes[7].

Countries are taking initiatives and measures to promulgate a regulatory framework that highlights the importance of such principles and conditions when using algorithms in making decisions[8]. One important aspect in such legal drafting regards the competence of the drafters, even more essential for AI-related legislation due to the high level of specificities and specialisms. The United States and Canada are exploring mechanisms that require thorough assessments from public administration agencies with expertise in deploying AI systems while maintaining oversight. These frameworks ensure that the public is informed about governmental decision-making as long as there is full transparency about these processes.

Where the public administration is using algorithmic automation or AI in offering services with no clear legal basis, it allows use within the designated boundaries. In many sectors, in the context of using AI systems for regulatory sandboxes and innovation, public authorities are known to have tested and implemented such systems[9]. An OECD Council Recommendation on Artificial Intelligence of 2019, amended in 2024, contributes to setting standards for the use of AI in public government, and requires governments to review and adapt, as appropriate, their policy and regulatory frameworks and assessment mechanisms as they apply to AI systems to encourage innovation and competition

[6] See Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance).

[7] M. Jenkins, *Algorithms in public administration: How do we ensure they serve the common good, not abuses of power* (6 October 2021), at https://www.transparency.org/en/blog/algorithms-artificial-intelligence-public-administration-transparency-accountability, last accessed 5 September 2024.

[8] T. Coleman, *How countries around the world are trying to regulate artificial intelligence*, THE WEEK, 4 July 2023, at https://theweek.com/artificial-intelligence/1024605/ai-regulations-around-the-world, last accessed 5 September 2024.

[9] R. Madan & M. Ashok, *AI Adoption and Diffusion in Public Administration: A Systematic Literature Review and Future Research Agenda*, 40(1) *Gov't Info. Q.* 101774 (2023).

for trustworthy AI[10]. OECD has also highlighted the need to perform AIAs as necessary to evaluate the potential risks and safeguard the public accountability of the AI systems, when and if public administrations experiment with the latter[11].

The European Union (EU) enacted a Data Governance Act in 2018, amended in 2022[12], and a Data Act in 2023[13], to facilitate reliable and secure access to data, promoting its use in key economic sectors and areas of public interest. It also made possible the establishment of the first regulatory pioneering framework, known as the AI Act[14], the first-ever legal framework on AI, making EU the leading organisation to regulate trustworthy use of AI systems. This single EU AI Act aims to regulate high-risk AI systems, provide protection, and mitigate the risks specifically faced by AI applications[15]. The EU AI Act offers a framework for

[10] The Recommendation on Artificial Intelligence (AI), adopted by the OECD Council meeting at Ministerial level on 22 May 2019, on the proposal of the Digital Policy Committee. This Recommendation aims to foster innovation and trust in AI by promoting the responsible stewardship of trustworthy AI while ensuring respect for human rights and democratic values. See at https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449, last accessed 5 September 2024.

[11] OECD.AI, *Algorithmic Impact Assessment tool*, at <https://oecd.ai/en/catalogue/tools/algorithmic-impact-assessment-tool>, last accessed 5 September 2024.

[12] Regulation (EU) 2022/868 of the European Parliament and of the Council of 30 May 2022 on European data governance and amending Regulation (EU) 2018/1724 (Data Governance Act) (Text with EEA relevance).

[13] Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on harmonised rules on fair access to, and use of, data and amending Regulation (EU) 2017/2394 and Directive (EU) 2020/1828 (Data Act) (Text with EEA relevance); the regulation will become applicable in September 2025.

[14] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act).

[15] The AI Act stipulates that its purpose is to set a "uniform legal framework in particular for the development, the placing on the market, the putting into service and the use of artificial intelligence systems (AI systems) in the Union […] to promote the uptake of human centric and trustworthy artificial intelligence (AI) while ensuring a high level of protection of health, safety, fundamental rights as enshrined in the Charter of Fundamental Rights of the European Union (the 'Charter'), including democracy, the rule of law and environmental protection,

legal AI experimentation. It assigns a risk-based classification to AI systems and requires strict accountability and transparency standards for high-risk systems, including those in law enforcement or healthcare[16].

Another important legal instrument that establishes the minimum guiding principles in implementing AI in the public services is the Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law, enacted this September 2024 (CoE AI Convention)[17]. The Council of Europe has adopted the first-ever international legally binding treaty aimed at ensuring the respect of human rights, the rule of law, and democratic legal standards in the use of AI systems. As a member state of the CoE, Albania was part of preparatory work through meetings in the course during the drafting of this framework Convention[18]. The CoE AI Convention sets a legal framework that covers the lifecycles of AI systems and addresses the risks they may pose in the design, use, and decommissioning of the AI system. It applies to using AI systems in the public sector, including entities acting on its behalf and the private sector. It provides two options for parties to comply with its principles: States can either adhere directly to the relevant provisions of the Convention or implement alternative measures that align with its requirements while respecting their international obligations regarding human rights, democracy, and the rule of law. It establishes transparency and oversight requirements tailored to specific contexts and risks, including identifying content generated by AI systems. They will also have to ensure accountability and responsibility for adverse impacts and that AI systems respect equality, including gender equality, the prohibition of discrimination, and privacy rights. Moreover, parties to the CoE AI

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to protect against the harmful effects of AI systems in the Union, and to support innovation" (AI Act, Recital no 1).

[16] A. Sinha, *A Public Administration Route to Algorithmic Transparency, Part III: Thresholds for Transparency in Private Sector* (*mozilla*, 14 February 2024), at https://foundation.mozilla.org/en/blog/an-public-administration-route-to-algorithmic-transparency-part-iii-thresholds-for-transparency-in-private-sector/>, last accessed 5 September 2024.

[17] Council of Europe, *Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law* (Council of Europe Treaty Series No 225, Vilnius, 5 September 2024).

[18] See https://www.coe.int/en/web/artificial-intelligence/cai#{%22126720142%22:[1]}, last accessed 5 September 2024.

Convention will have to ensure the availability of legal remedies for victims of human rights violations related to the use of AI systems and procedural safeguards, including notifying any persons interacting with AI systems that they are interacting with machines[19].

2. The Albanian Legal Framework on Digitalising Public Services and Use of Digital Algorithmic Automation and AI by the Public Administration

Technology use in the public sector in Albania is a well-established reality. While respect for human rights is a fundamental obligation deriving from the Albanian Constitution, it automatically applies to any medium used by and in the public administration. The Albanian Constitution stipulates that human rights are the core of the public administration in the country[20]. Article 15 of the Constitution requires public authorities to actively ensure and respect fundamental rights and freedoms, so any AI use practice or AI-related policies, including laws and sublegal rules need to reflect and respect human rights. This foundation serves as a guide and limitation to any respective legal effort.

The Albanian framework establishes a transparent and effective legal structure for providing public services in digital form. The core procedural legislation for the wholeness of public administration, the Albanian Code of Administrative Procedures, establishes the core principles for public administration and serves as the foundation for electronic service delivery[21]. Law no. 43/2023 On Electronic Governance defines the technical aspects of the electronic governance and obligations that the public authorities and private subjects must respect to offer their services. It sets the rules for citizen participation in the policy-making process while enhancing public administration accountability as a byproduct[22]. The other sectorial laws that do regulate the offering of public

[19] *Ibid*.

[20] Part 3 of the Constitution of the Republic of Albania, at: https://qbz.gov.al/share/JiLN1sTiQu6JD0BWHggXjA (in Albanian), last accessed 5 September 2024.

[21] Kodi i Procedurave Administrative [Administrative Procedures Code] (Albania 2015).

[22] Ligji nr. 43/2023 për Qeverisjen Elektronike [Law No. 43/2023 on Electronic Governance] (Albania 2023).

services and do not address digital provisions still require the physical presence of the requester. This emphasises the need for a more whole-scale comprehensive legal reform to allow the integration of automated systems in public administration. Furthermore, there is no clear law that addresses the issue of integrating automated systems in public service delivery in Albania, but a Decision of the Council of Ministers, i.e. a sub-legal act, has been enacted and regulates the document of methodology and technical standards regarding the use of AI in Albania[23]. According to the principle of providing active help laid down in the Albanian Code of Administrative Procedures, every user has the right to access public services electronically and, in compliance with the Order of the Prime Minister of Albania, as of 2020, the institutions must provide all services online by taking all necessary measures[24].

Albania has undertaken important reforms to include the digitalisation of public services, aiming to provide a more efficient public administration by reducing service costs, minimising human error through algorithmic automation, and harmonising administrative processes to avoid unnecessary bureaucracy. Law no 9918/2008 on Electronic Communication serves as a fundamental framework for the functioning of the e-Albania platform and the provision of online services, through establishing the basis for the platform's operability. The 2008 Electronic Communication Law defines key aspects related to the security, privacy, and interoperability of electronic services by setting rules for the infrastructure of electronic communications on which e-Albania relies. It outlines regulations for operators of electronic networks, including internet service providers and secure communication systems. This law stipulates that every electronic communication offered in Albania must be made in a transparent manner, ensure the protection of personal data and effective system interoperability. This law serves as a solid foundation for providing

[23] Urdhër i Kryeministrit të Republikës së Shqipërisë nr. 158 (25 nëntor 2019) për Marrjen e Masave dhe Rregullimin e Dispozitave Ligjore për Aplikimin e Shërbimeve Vetëm Online nga Data 1 Janar 2020 [Order of the Prime Minister of the Republic of Albania No. 158 (25 November 2019) on the Adoption of Measures and Regulation of Legal Provisions for the Provision of Services Only Online from 1 January 2020].

[24] Article 15, Kodi i Procedurave Administrative [Administrative Procedures Code] (Albania 2015).

safe public services through the e-Albania electronic platform[25]. The legal framework onward, including the new Albanian Code of Administrative Procedures of 2015, which provided for a one-stop-shop service to streamline and ease access to public services. The 2008 Electronic Communication Law defines a 'file' as a database that is interconnected and stored on hardware for electronic data. Associative services are all services that are linked within a network of electronic communication or an electronic communication service that enables and supports the provision of services within this network. These include number translation services or systems that provide equivalent functionality, conditional access systems, electronic program guides, and other services such as identity, location, and presence services[26].

With the rise of new technologies, rapidly changing our social interaction and the emergence of AI, and algorithmic automation as a means of processing public services, the Albanian government has taken several steps to enhance public service delivery by embracing algorithmic automation, digitalisation, and regulation of these new innovatory and challenging ways of government. Through the e-Albania portal[27], the government has implemented an automated system that integrates and offers a wide range of public services. This portal is the official platform for delivering and managing all State-run services, streamlining processes, and ensuring that public services are accessible and efficient in the digital age. In 2010, the national coordinating authority, the National Agency for Information Society (NAIS), was established[28].

[25] Ligj Nr. 9918, datë 19 Maj 2008, Për Komunikimet Elektronike në Republikën e Shqipërisë (i ndryshuar) (Fletore Zyrtare Nr. 197, faqe 15283) [Law No. 9918, dated 19 May 2008, On Electronic Communications in the Republic of Albania (as amended) (Official Gazette No 197, page 15283)].

[26] Ibid., article 3/ para. 64-65 Ligj Nr. 9918, datë 19.5.2008, Për Komunikimet Elektronike në Republikën e Shqipërisë (i ndryshuar) (Fletore Zyrtare Nr. 197, faqe 15283).

[27] E-Albania, [*Official Government Portal of Albania*], at https://e-albania.al/Default.aspx, last accessed 5 September 2024.

[28] Ligj Nr. 10 325, Për Bazat e të Dhënave Shtetërore (23 September 2010) [Law No. 10 325, On State Databases (23 September 2010)]; Vendim Nr. 961, Për Përcaktimin e Autoritetit Rregullator Koordinues të Bazave të të Dhënave Shtetërore (24 November 2010) [Decision No. 961, On the Determination of the Coordinating Regulatory Authority for State Databases (24 November 2010)]; Vendim Nr. 303, Për Krijimin e Njësive të Teknologjisë së Informacionit e të Komunikimit në Ministritë e Linjës dhe Institucionet e Varësisë (31 March 2011) [Decision No. 303,

Further, Law no. 107/2015 on Electronic Identification and Trusted Services (as amended) provides the legal framework for setting up a single portal for offering digital services[29]. Offering digital services also involves the automated processing of services and the issuance of official documents through electronic services and their algorithmic automation[30]. In 2016, the Albanian Parliament enacted Law no. 66/2016 on Services, which is an important milestone in transforming the public administration service-offering through the single e-Albania portal and digitalising public services in Albania. Until 2016, the e-Albania portal offered a total of 400 online services, most of which were automated[31]. These services were primarily related to registrar offices and required minimal interaction between the institutions and those accessing them.

One important aspect regards administrative decision-making, mainly through administrative acts, regulated by the 2015 Albanian Code of Administrative Procedures. The latter stipulates that such acts be issued by the 'public organ'[32] and include the signature of the so-called 'responsible employee'[33]. It seems that, currently, such acts are the task of human beings, while their signatures can also be issued electronically. Considering such a regulation, the Albanian Code of Administrative Procedures appears not to be best arranged for decision-making made by human beings.

A driving force for the use of technology and digitalisation in all sectors, public included, is the European integration process. Since 2003, with the Summit of Thessaloniki, Albania has sought to align its legal framework with the EU, in pursue of membership[34].

On the Creation of Information and Communication Technology Units in Line Ministries and Dependent Institutions (31 March 2011)].

[29] Ligj Nr. 107/2015, Për Identifikimin Elektronik dhe Shërbimet e Besuara (amended by Ligj Nr. 123/2016, datë 15 Dhjetor 2016) [Law No. 107/2015, On Electronic Identification and Trusted Services (amended by Law No. 123/2016, dated 15 December 2016)].

[30] Ibid., article 24.

[31] See *Portali E-Albania, Karcanaj për A1 Report brenda 2016-s,400 shërbime* (Shqiptarja.com, 20 Maj 2015), at https://shqiptarja.com/lajm/portali-e-albania-karcanaj-per-a1-br-report-brenda-2016-s-400-sherbime, last accessed 5 September 2024.

[32] Article 3 of the 2015 Albanian Code of Administrative Procedures.

[33] Article 99 of the 2015 Albanian Code of Administrative Procedures.

[34] European Commission, *European Commission Proposes New Data Protection Framework for the EU*, at

This perspective contributed, among other things, to mobilising efforts to establish more effective services through a digitalisation agenda: in 2009, the country drafted its first 'National Information and Communication Technologies Strategy' (ICT Strategy)[35]. Being the first paramount moment of the country's path towards the new innovative e-initiatives, this strategic document aimed to guide the development of society toward the new information era, making the inclusion of technology a top priority[36]. The EU Country Report for Albania 2023 has praised the efforts of the Albanian government in digitalising services through the e-Albania portal. However, it emphasises the need for further efforts to ensure equitable access to services for people with limited digital skills or limited access to IT equipment, following the decision to close front office contact centres in 2022[37].

3. Infrastructure for Digital Data Management and Interoperability between Institutions

Law No. 66/2016 "For Services in the Republic of Albania"[38], partially harmonised with the EU Directive on services in the internal market, aims to regulate the operational form of offering public services, including the standards and procedures that the service offers should follow[39]. A Single Contact Point (SCP) is

https://ec.europa.eu/commission/presscorner/detail/en/PRES_03_163, last accessed 5 September 2024.

[35] *Strategjia Ndërsektoriale për Shoqërinë e Informacionit 2008-2013* [Intersectoral Strategy for the Information Society 2008-2013] (Albania, 2009).

[36] *Strategjia Ndërsektoriale për Shoqërinë e Informacionit, 2008-2013* [Intersectoral Strategy for the Information Society 2008-2013] (Albania, 2009) I, which set the main directions and objectives for the development of the information society; *Strategjia Ndërsektoriale 'Axhenda Dixhitale e Shqipërisë 2015-2020'* [Intersectoral Strategy 'Digital Agenda of Albania 2015-2020'] (Albania, 2015), Strategic Priority 1: 'Development of e-Governance Policies and Provision of Interactive Public Services for Citizens and Businesses'; *Strategjia Ndërsektoriale 'Axhenda Dixhitale e Shqipërisë 2022-2026'* [Intersectoral Strategy 'Digital Agenda of Albania 2022-2026'] (Albania, 2022).

[37] European Commission, *Albania 2023 Report* (8 November 2023), SWD (2023) 690 final, at https://neighbourhood-enlargement.ec.europa.eu/albania-report-2023_en, last accessed 5 September 2024.

[38] Ligj Nr. 66/2016, Për Shërbimet në Republikën e Shqipërisë [Law No. 66/2016, For Services in the Republic of Albania].

[39] Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on Services in the Internal Market [2006] OJ L376/36.

integrated into the e-Albania portal and requires that every official web of the state administration institution be integrated into the system. A Decision of the Council of Ministers (CoM) No. 1147/2020[40] outlines that online services provided by the public administration are categorised according to different levels and establishes the procedures for individuals to access these services through the unique government portal. According to this decision, electronic services in Albania are classified into four levels:

1. First Level: this involves one-way communication, in which the public institution provides the user with information about the public service.
2. Second Level: at this level, users can download and fill out the application form for the requested service.
3. Third Level: this level enables two-way interaction between the public institution and the user, allowing the user to complete and submit the application electronically.
4. Fourth Level: this is the highest level, involving full two-way interaction. The user can fill out and submit the application electronically and receive the institution's response electronically, completing the entire public service process entirely online.

In this context, users can access the whole public service online through collaboration between the competent institution and NAIS, and the algorithmic automation of the procedure can be done simultaneously (see Article 8 of the CoM)[41]. For smooth communication in Albania, all the institutions offering online services have the obligation to appoint an institutional coordinator with NAIS[42]. Every user receives a unique application number for the service they applied for through the e-Albania portal. The confirmation is provided electronically or in hard copy after the service is processed, either automatically or manually. As part of the legal framework, CoM Decision No. 623 of 2018 approved the

[40] Vendim Nr. 1147, Për Krijimin e Bazës së të Dhënave Shtetërore "Portali Unik Qeveritar e-Albania" dhe për Miratimin e Rregullave "Për Mënyrën e Funksionimit të Pikës së Vetme të Kontaktit" (9 Dhjetor 2020) [Decision No. 1147, On the Creation of the State Database "e-Albania Government Portal" and the Approval of the Rules "On the Operation of the Single Contact Point" (9 December 2020)], Article 2.
[41] Ibid.
[42] Ligj Nr. 66/2016, Për Shërbimet në Republikën e Shqipërisë [Law No. 66/2016, For Services in the Republic of Albania] [Article 23].

Charter of Citizens' Rights on Accessing Public Services[43]. This document outlines approximately 20 rights that citizens and businesses have when accessing public services, including the right to information, the right to withdraw from a request, the removal of burdens on citizens, the right to active support during the service provision process, and the right not to be penalised for errors or inaccuracies in these services, among others. This charter was enacted as a bylaw pursuant to the Law on the Way of Delivering Public Services at Front Office Level[44]. However, it should be noted that the CoM formulated this Charter in a more declarative manner. This legal framework does not introduce new rights but serves as a sensibilisation tool for both citizens and public employees involved in providing public services. These services were provided by the Agency for the Delivery of Integrated Services Albania. Indeed, the agency was closed following a request from the Agency for Dialogue and Co-Governance because 50% of the services offered by the Agency are no longer applicable[45].

Albania transitioned from a system that offered only direct physical public services to a more diversified digital public administration. Two years ago, the country entirely shifted to the e-Albania platform. Since 2020, e-Albania, the government portal, has served as the only centralised gateway for accessing and offering services online, reducing the need for physical contact with public institutions. Currently, this platform provides around 1,245 electronic public services are categorised and automated according to the levels defined by the United Nations Public Administration Network[46]. In 2022, the Council of Ministers of Albania enacted Decision No. 252 on the procedures for offering online services by service-providing institutions and the methodology for monitoring and controlling their administrative activities. This decision is considered an essential step toward the complete digitalisation of

[43] VKM nr. 623, Për Miratimin e Kartës së të Drejtave të Qytetarit për Përfitimin e Shërbimeve Publike (26 Tetor 2018) [Decision No. 623, On the Approval of the Charter of Citizens' Rights for Accessing Public Services (26 October 2018)].

[44] Ligj Nr. 13/2016, Për Mënyrën e Ofrimit të Shërbimeve Publike në Sportel në Republikën e Shqipërisë [Law No. 13/2016, On the Way of Delivering Public Services at Front Office Level in the Republic of Albania].

[45] Shkrese Nr. 56 prot., datë 22.01.2024, Agjencia për Dialog dhe Bashkëqeverisje [Letter No. 56 prot., dated 22 January 2024, Agency for Dialogue and Co-Governance].

[46] *Statistika* [Statistics], August 2024 (e-albania.al), at https://e-albania.al/Default.aspx, last accessed 5 September 2024.

public administration services, mandating that every service be provided electronically to minimise physical contact, combat corruption, and facilitate the issuance of documents with electronic stamps and signatures. It aimed to streamline and simplify bureaucratic processes, reducing administrative delays and eliminating unnecessary procedures that lead to complaints and dissatisfaction from citizens.

3.1. The Albanian Digital Agenda: The Digitalisation of Public Administration

In 2022, the Council of Ministers of Albania approved the Digital Agenda (Strategy and Action Plan 2022-2026). This agenda aimed at transforming the delivery of public services and effectively aligning them with citizens' needs. That same year, Albania was ranked 63rd out of 193 countries on the e-Government Development Index[47]. To succeed in its digital transformation as a middle-income country, Albania should meet international and EU standards and adopt the new strategy, which gives the country procedures to safely access the government platform from any electronic device. It also allows users to download and print documents using standard printers with regular paper, ensuring total legality. The strategy reports that over 16 million documents have been downloaded since 2017, saving citizens an estimated 700 years of waiting in line and over 350 million Euros in just four years[48]. This strategy outlines that through the integrated e-Albania portal, Albania will offer services based on intelligent systems and algorithmic automation, utilising cloud first model technology to store all data. However, this approach may expose the system to cyberattacks and data breaches, as evidenced by the cyberattacks on Albania's electronic systems by Iran in 2022[49]. While the Strategy mentions adopting Cloud First Model technology, detailed information on the regulation and implementation of these services

[47] United Nations, *E-Government Knowledgebase: Data Center*, at https://publicadministration.un.org/egovkb/Data-Center, last accessed 5 September 2024.

[48] Vendim Nr. 370, datë 1.6.2022, për miratimin e Strategjisë Ndërsektoriale "Agjenda Digjitale e Shqipërisë" dhe të Planit të Veprimit 2022–2026 [Decision No. 370, dated 1 June 2022, approving the Inter-Sectoral Strategy "Digital Agenda of Albania" and the Action Plan 2022–2026].

[49] Ayman Oghanna, *How Albania Became a Target for Cyberattacks* (25 March 2023) Foreign Policy, at https://foreignpolicy.com/2023/03/25/albania-target-cyberattacks-russia-iran/, last accessed 5 September 2024.

is lacking, specifically regarding how this automated intelligence will detect and respond to threats and activate defence systems. The digital strategy aims to automate the workflow of state services, enabling users to access services, particularly those dependent on data uploaded to the system, as quickly as possible. This approach is not unique, as similar cloud-based models have been established by other countries, offering automated services driven by algorithms that are periodically updated to meet users' evolving functions and requests.

3.2. Development of the Algorithmic Automation and Organs Responsible

Law no. 43/2023 on Electronic Governance is a crucial legal achievement in the strategy for digitalising public administration services[50]. This law establishes rules for offering electronic services in Albania, processing data, and handling electronic documents through information and communication technology (ICT). Along with the other legal frameworks for regulating electronic governance, it serves as the primary legal framework for ensuring an effective and secure electronic government, increasing citizen access to public services, and enhancing institutional transparency. During the drafting of this law, there was a notable lack of engagement from experts in the field and other interested parties, resulting in an absence of clear and constructive proposals aimed at enhancing the legal framework. For example, during the consultation phase for the Law on Electronic Governance, only a few minor proposals were submitted by the involved stakeholders, and there were no comments or feedback recorded in the Electronic Register of Public Consultation. This lack of substantive input reflects a broader issue of limited stakeholder participation, which is crucial for developing comprehensive and effective legislation that addresses the evolving challenges in electronic governance, data protection, and cybersecurity[51]. Notwithstanding this limited interest by stakeholders, Article 2 of the Law on Electronic

[50] Ligji nr. 43/2023 për Qeverisjen Elektronike [Law No. 43/2023 on Electronic Governance] (Albania 2023).

[51] Ministry of the Interior, II. Raport për rezultatet e konsultimeve publike i plotësuar - Për qeverisjen elektronike (Report, 2024), https://www.konsultimipublik.gov.al/documents/RENJK_413_II.-Raport-p-r-rezultatet-e-konsultimeve-publike-i-plotesuar-Per-qeverisjen-elektronike.docx, last accessed 5 September 2024.

Governance outlines principles for equal access to public services for all users, and promotes the development of digital platforms for private and public entities. For the first time, the law defines 'blockchain' as distributed ledger technology within ICT systems and introduces the concept of e-residency for citizens registered abroad via the government portal[52].

Additionally, the law emphasises building an infrastructure for offering electronic services using AI. Article 3, paragraph 16 of this Law defines AI as the simulation of human intelligence through systems and computer algorithms. Automated services are delivered through an interactive government portal, enabling communication across state databases to provide electronic services. This is facilitated by the Electronic Records Management (ERM) system, which handles the collection, registration, and distribution of electronic documents[53]. All automated information is stored in the National Register of Government Electronic Services, secured by various measures, policies, and technologies, such as single sign-on, two-dimensional codes, and systems for documents with electronic stamps[54]. The law also details the structure and form of electronic documents, regulating their algorithmic automation through advanced technology. Meanwhile, this law vests the NAIS as the central authority for coordinating algorithmic services and interacting with other systems and platforms within the electronic identification framework[55].

The ICT systems and electronic services infrastructure include[56]:

a. the e-Albania governmental platform;
b. the National Registry of Registered Database Services;
c. the Government Datacentre and related continuity centres;
d. the government network (*Govnet*);
e. the public key and digital certificate management system for state administration and private entities;
f. the electronic document administration system;

[52] Ligji nr. 43/2023 për Qeverisjen Elektronike [Law No. 43/2023 on Electronic Governance] (Albania 2023) Article 2.
[53] Ibid., Article 3.
[54] Ibid., Article 8.
[55] Ibid., Article 24.
[56] Ibid., Article 37.

g. the government's electronic payment platform is on the e-Albania portal;

h. the '*e-Residence*' system;

i. any other infrastructure established for electronic government.

These interconnected platforms should enable the algorithmic automation and AI-driven interoperability of systems to provide services. However, despite the law's mandate for AI technology, the government has yet to introduce the necessary protocols and technical standards for implementing AI in public administration services. Despite the continuous efforts of the Albanian government to establish a robust legal framework for regulating the use of AI in public decision-making and the automation of public services, there remains a lack of transparency and clarity regarding how these innovative technologies will be implemented. Specifically, there is insufficient regulation on how algorithmic decision-making mechanisms and machine learning will be integrated into everyday public administration. The protocols, intended uses, and monitoring mechanisms for these technologies are not clearly defined, leading to uncertainty. In December 2023, the government of Albania approved a general analytical program to be examined in 2024. This program includes the review of legal and sub-legal acts related to cybersecurity, internet access for public sector websites and applications, and the approval of AI methodology and technical standards. Although the latest draft of this act was scheduled for approval within the first four months of 2024, it has yet to be drafted and made available for public consultation.

4. Legal Restrictions on the Use of Algorithmic Automation/AI by the Public Administration: General Trends

Governments worldwide, especially in countries like the US and Europe, are starting to limit how AI and automated systems can be used in public services, especially when they might affect people's fundamental rights. In the European Union, the new Artificial Intelligence Act bans specific high-risk AI use by public administrations. For example, AI systems that try to manipulate people, assign social scores like China's social credit system, or use facial recognition for large-scale surveillance by the police are not allowed. These bans exist because such AI systems could seriously

harm people's privacy, freedom, or other fundamental rights. The EU is stringent regarding protecting democratic processes and individual freedoms from AI systems[57]. Meanwhile, in the US, even though there is no federal law as yet, some states and cities have acted. For example, San Francisco and other places have banned the use of facial recognition technology due to concerns over privacy violations and racial bias[58]. At the federal level, the government is working on rules to make sure AI used in public services, like welfare or law enforcement, does not cause unfair outcomes or harm people's rights[59]. These restrictions are being implemented to ensure AI is used responsibly, especially in sensitive areas like law enforcement and social welfare, where unfair or biased decisions can have serious consequences[60]. On the contrary, Albania has not regulated the bans existing on the general application of the AI system and algorithm use, such as in the case of the EU. It should be noted that the Brussels effect and the enthusiasm of the Albanian government to regulate AI inclusion will make the transposition of the EU acquis into the Albanian legal system possible. The EU AI Act restricts the use of biometric data and demographic and geographic statistics to improve predictive results and decision-making, aiming to address concerns that such data could lead to biased outcomes, including misogyny, racism, and other forms of discrimination. Albania will also be obliged to include these types of bans in its legal framework and protocol the use of AI and automated systems, especially in these fields, as there is a need to

[57] Human Rights Watch, *Q&A: How the EU's Flawed Artificial Intelligence Regulation Endangers the Social Safety Net* (2021), at https://www.hrw.org/news/2021/11/10/how-eus-flawed-artificial-intelligence-regulation-endangers-social-safety-net, last accessed 5 September 2024.

[58] K. Conger, R. Fausset, S.F. Kovaleski, *San Francisco Bans Facial Recognition Technology* (14 May 2019) The New York Times, at https://www.nytimes.com/2019/05/14/us/facial-recognition-ban-san-francisco.html, last accessed 5 September 2024.

[59] Executive Office of the President Office of Management and Budget, *Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence* (Memorandum M-24-10, 28 March 2024, from Shalanda D Young), at https://www.whitehouse.gov/wp-content/uploads/2024/03/M-24-10-Advancing-Governance-Innovation-and-Risk-Management-for-Agency-Use-of-Artificial-Intelligence.pdf, last accessed 5 September 2024.

[60] Müge Fazlioglu, *US federal AI governance: Laws, policies and strategies* (November 2023) *iapp*, at https://iapp.org/resources/article/us-federal-ai-governance, last accessed 5 September 2024.

include technological and intelligence systems in public administration.

Despite the positive developments in the digitalisation of public administration services, the Progress Report for Albania 2023 states, in Chapter 10: Digital Transformation and Media, that, '[a]s regards online public services, during the reporting period 95% of applications for 1,217 public services were done online, with 7,833,332 e-sealed documents downloaded in 2022 by more than 2.8 million registered users on the e-Albania portal. Of these, only about 1.5 million are active users. This adds up to 14,276,256 individual uses of e-services in 2022. Authorities need to ensure and facilitate equal access to online services for all citizens and to enhance efforts to align with the Digital Services Act and Digital Markets Act'. The same progress report highlighted that 'other barriers such as the lack of digital skills and access to technology continue to prevent Roma and Balkan Egyptian people from fully enjoying their rights and accessing public services, which are increasingly digital. Additional efforts and resources are required to accelerate the inclusion of Roma and Balkan Egyptians, tackle anti-gypsyism, discrimination, and educational and physical segregation, to promote participation of the Roma, and to reduce the gaps with the rest of the population'[61]. This digital vacuum among the different strata of society will continue to widen as citizens who lack digital connectivity miss out on the long-term benefits of innovation and digitalisation, including the Internet of Things (IoT) and connected infrastructure. The larger the digital divide, the worse the impact for digital sets. This risk is not limited to societies like Albania, where the digital gap is significant, but also affects EU countries with smaller digital gaps. The Coronavirus pandemic exposed social inequalities related to internet network weaknesses[62]. These weaknesses failed to handle the increased demand for electronic services during the pandemic and led to the isolation of various social groups due to poor or absent internet connectivity.

[61] European Commission, *Albania Progress Report 2023* (European Commission, 2023) 94.

[62] OECD Policy Responses to Coronavirus (COVID-19), *Keeping the Internet up and running in times of crisis* (2020), at https://www.oecd.org/coronavirus/policy-responses/keeping-the-internet-up-and-running-in-times-of-crisis-4017c4c9/, last accessed 5 September 2024.

5. Public Administration Daily Operation and the Inclusion of Algorithmic Automation/AI

Public authorities rely on AI and/or automated systems for daily operations globally, though the extent of use varies by sector and country. In Europe, AI is used in public services, education, and welfare programs. For example, Denmark has experimented with using AI to manage hiring school staff[63], and Italy has used it to determine welfare eligibility[64]. However, these systems have faced challenges, like errors leading to unfair benefit cuts or unreasonable job assignments. Chatbots assist with employment services in Austria, but they have been criticised for reinforcing gender stereotypes[65]. In Albania, algorithmic automation is utilised in various sections of the government portal. This includes data from the National Register of Civil Status, managed by the Directorate General of Civil Status; data from the Commercial Register, administered by the National Centre of Business; data from Electronic Taxation, overseen by the Directorate General of Taxation; and other data that interacts with the e-Albania portal and is registered in the National Register of State Databases[66].

The e-Albania portal, as the sole official gateway for public services, automatically uses this data. It integrates with all public administration websites offering services, providing users with access through online and offline procedures, as well as assistance links. The institutions offering services must update the central contact point with the relevant information and request any

[63] J.R. Holm & E. Lorenz, *The impact of artificial intelligence on skills at work in Denmark*, 37(1) New Technology, Work and Employment 79–101 (2022), https://doi.org/10.1111/ntwe.12215, last accessed 5 September 2024.

[64] European Commission, *How the Italian Social Security and Welfare Administration (INPS) Used Artificial Intelligence to Streamline Services*, at https://joinup.ec.europa.eu/collection/public-sector-tech-watch/how-italian-social-security-and-welfare-administration-inps-used-artificial-intelligence-streamline, last accessed 5 September 2024.

[65] S. Alon-Barkat & M. Busuioc, *Human–AI Interactions in Public Sector Decision Making: "Automation Bias" and "Selective Adherence" to Algorithmic Advice*, 33(1) J. Pub. Admin. Res. & Theo. 153–169 (2023), https://doi.org/10.1093/jopart/muac007, last accessed 5 September 2024.

[66] Vendim Nr. 1147, datë 9.12.2020, për krijimin e bazës së të dhënave shtetërore "Portali Unik Qeveritar e-Albania" dhe për miratimin e rregullave "Për mënyrën e funksionimit të pikës së vetme të kontaktit" [Decision No. 1147, dated 9 December 2020, on the creation of the state database "e-Albania Unique Government Portal" and approval of the rules "On the Functioning of the Single Contact Point"].

required changes from the NAIS. The creation of the national database – with the Council of Ministers Decision of 2021 – known as the Register of Innovative Service Providers and Automated Collective Investment Enterprises, consists of two central registers: the Register of Innovative Service Providers and the Register of Automated Collective Investment Undertakings[67]. The database is managed by the NAIS, which, as the public authority responsible for it, oversees all aspects of access, including updating and modifying the stored information. Access to the database is granted to institutions upon approval from the controller[68]. These measures have paved the way for algorithmic automation in the daily operations of public institutions and the e-Albania portal. Each electronic service offered by e-Albania is designed so that data are registered with the coordinating regulatory authority (NAIS) and processed through algorithmic automation, thanks to interoperability between systems. These electronic services are developed and implemented based on the *Backend as a Service* (BaaS) model[69]. Albanian public administration heavily relies on these BaaS systems where backend services are outsourced to cloud providers. In the context of e-Albania, this system allows interaction between multiple government databases and systems, for scalability purposes and automated workflow. Using this technology for data warehousing and processing raises the issue of data sovereignty, since the data are stored beyond government control. If the BaaS platforms are not well secured, sensitive data may be targeted by hackers, as demonstrated by the Albanian 2022 cybersecurity attack. Ensuring security practices across jurisdictions is challenging, however BaaS providers must comply with local and international data protection laws, such as the GDPR.

[67] Vendim Nr. 267, datë 12.5.2021, për krijimin e bazës së të dhënave shtetërore "Regjistri i Ofruesve të Shërbimit Inovativ dhe Sipërmarrjeve të Investimeve Kolektive të Automatizuara" [Decision No. 267, dated 12 May 2021, on the creation of the state database "Registry of Innovative Service Providers and Automated Collective Investment Enterprises"].

[68] E. Xhajanka, *Krijohet 'Regjistri i Ofruesve të Shërbimit Inovativ dhe Sipërmarrjeve të Automatizuara'* (ata, 13 May 2021), at https://ata.gov.al/2021/05/13/krijohet-regjistri-i-ofruesve-te-sherbimit-inovativ-dhe-sipermarrjeve-te-automatizuara/, last accessed 5 September 2024.

[69] Ligji nr. 43/2023 për Qeverisjen Elektronike [Law No. 43/2023 on Electronic Governance] (Albania 2023), Article 47.

6. Transparency and Accountability, Terms of Privacy, Quality of Datasets, and Cybersecurity

Public administration agencies should safeguard data privacy and establish a safe hack-proof automating system as per the GDPR standards set by the EU for personal data processed by AI systems. Techniques like de-identification and differential privacy are recommended to safeguard sensitive information, especially in the public sector[70]. Algorithmic impact assessments (AIAs) are required for high-risk AI systems, like those used in law enforcement or immigration services. These assessments help identify biases, ensure fairness, and evaluate the potential societal impacts of the system before being put into use[71]. While the world strives to ensure high-quality datasets, Albania has faced challenges in implementing secure systems and establishing an untouchable electronic database. In 2020, continuous cyberattacks from Iran shut down the government system, including the Institute of Statistics, rendering online government services inaccessible to the public[72]. The attacks continued in 2023, affecting several state institutions' websites and private companies, including One Albania and Banka Credins[73]. Albania urgently needs to amend its cybersecurity legislation and establish more

[70] C. Chin-Rothmann, *Protecting Data Privacy as a Baseline for Responsible AI* (18 July 2024), at https://www.csis.org/analysis/protecting-data-privacy-baseline-responsible-ai, last accessed 5 September 2024.

[71] AI Now Institute, *Algorithmic Impact Assessments Report: A Practical Framework for Public Agency Accountability* (9 April 2018), at https://ainowinstitute.org/publication/algorithmic-impact-assessments-toward-accountable-automation-in-public-agencies, last accessed 5 September 2024.

[72] Cybersecurity and Infrastructure Security Agency, *AA22-264A: Iranian Cyber Actors Conduct Cyber Operations Against the Government of Albania* (27 September 2022), at https://www.cisa.gov/sites/default/files/publications/aa22-264a-iranian-cyber-actors-conduct-cyber-operations-against-the-government-of-albania.pdf, last accessed 5 September 2024; Agjencia Kombëtare e Shërbimeve të Informacionit, *Microsoft dhe FBI përfundon investigimin: A i mbijetoi Shqipëria sulmit të paprecedentë kibernetik?* (24 September 2022), at https://akshi.gov.al/perfundon-investigimi-i-microsoft-it-dhe-fbi-se-shqiperia-i-mbijetoi-sulmit-te-paprecedente-kibernetik/, last accessed 5 September 2024.

[73] Fjori Sinoruka, *Albanians Mull Options as Data Security Takes New Hit* (*BIRN*, 25 January 2023), at <https://balkaninsight.com/2023/01/25/albanians-mull-options-as-data-security-takes-new-hit/>, last accessed 5 September 2024.

resilient rules for contracted third parties that provide, maintain, and process public services[74].

Despite the legal framework regulating privacy, cybersecurity, and the transparency and review of algorithmic automation used by public infrastructures in Albania, there is a significant gap in the effective implementation of these principles and regulations. The latest decision enacted by the CoM dates back to 2022. The 2008 Law on Electronic Governance mandates that public authorities provide services in line with the "once-only" principle, which defines that individuals can appear physically before authorities only once when accessing electronic services[75]. However, there is still considerable human involvement in the implementation of algorithmic automation and AI within public administration despite the government decision in 2022 to offer services only in electronic form. More than 95% of the state services are eligible to be offered online[76].

Regarding the quality of datasets, the law mandates that electronic governance must ensure the availability of data from public registers to all public authorities and private entities, in compliance with standards for personal data protection, confidentiality, and data security[77]. The interoperability of systems, including cross-border service provision, must also adhere to existing legislation on personal data protection and align with European Union practices. However, it is important to note that the current legislation lacks specific bylaws that define and regulate the protocol rules necessary for full compliance with these standards.

Data protection is ensured by the outlined legal framework, which prohibits the unauthorised disclosure of data. According to personal data legislation, data are categorised as personal and sensitive. Processing data during online applications must comply

[74] I. Dedja, *Sfidat e Qeverisjes Kibernetike për Shqipërinë: Adresimi i Dilema të Zgjedhjes së Politikave* (Centre for the Study of Democracy and Governance, September 2023) 66, at https://csdgalbania.org/al/wp-content/uploads/2023/12/Sfidat-e-qeverisjes-kibernetike-per-Shqiperine.pdf, last accessed 5 September 2024.
[75] Qendresa Qytetare & National Endowment for Democracy, *Perceptimi Publik për Qeverisjen Digjitale dhe Ofrimin e Shërbimeve Online në Shqipëri: Raport Vlerësimi* (2024), 25, at https://qeverisja.qq.com.al/index.php/2024/02/08/perceptimi-publik-per-qeverisjen-digjitale-dhe-ofrimin-e-sherbimeve-online-ne-shqiperi/, last accessed 9 September 2024.
[76] Ligji nr. 43/2023 për Qeverisjen Elektronike [Law No. 43/2023 on Electronic Governance] (Albania 2023) Article 6 & 33/2.
[77] Ibid., Article 8.

with legal requirements[78]. Individuals should be informed about how their data are handled and where it is collected. Data processing involves various actions, including collection, recording, storage, sorting, adaptation, correction, consultation, use, blocking, deletion, destruction, and transfer.

However, the legal framework is unclear on which actions by data processors are considered lawful, potentially increasing uncertainty about lawful data processing. In cases of any contested infringement of rights, the individual has the right to file an administrative complaint with the Information and Data Protection Commissioner of Albania (IDPC). Effective data processing practices must be established for online public services. For example, accessing public services requires consent from the individual to start the process on the e-Albania portal. However, users sometimes do not give consent due to lack of knowledge, despite being required to use these services. In cases of infringements of data processing and failure to follow clear protocols, severe outcomes might result, such as the significant data breach occurred in 2021, when the personal data of 910,000 Albanians were leaked. This data included personal and sensitive information such as health records, family details, political affiliations, religious beliefs, and ethnicity. Despite NAIS's claim that e-Albania does not store, administer, or process data but merely serves as an entry gateway, the IDPC recommended that NAIS establish protocols covering all data processing procedures[79]. In 2020, the IDPC found that NAIS had a contract with a private data processor for the physical storage of data, but the memorandum did not clearly address data protection regulations and legal requirements in accordance with the Law on the Protection of Personal Data[80].

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[78] Ligji Nr. 9887/2008, Për Mbrojtjen e të Dhënave Personale, i ndryshuar [Law No. 9887/2008, On the Protection of Personal Data, as amended] (Albania 2014) Article 3/1.

[79] Geneva Centre for Security Sector Governance (DCAF) & Institute for Democracy and Mediation (IDM) *Tejkalimi i hendekut midis sigurisë kibernetike dhe të drejtave* (2022) 14, at https://idmalbania.org/sq/raport-studimor-tejkalimi-i-hendekut-mes-sigurise-kibernetike-dhe-te-drejtave-te-njeriut/, last accessed 9 September 2024

[80] Institute for Democracy and Mediation, *Sondazhi i opinionit publik 2022: Besimi në qeverisje* (2023), 15, at https://www.undp.org/sites/g/files/zskgke326/files/2023-07/tig2022_report-alb.pdf, last accessed 9 September 2024.

A 2022 survey, "Besimi në Qeverisje"[81], revealed that 90.3% of respondents consider personal data important, and 59.8% believe their data are not managed correctly. The Albania Progress Report 2023 expressed concern that Albania "should take urgent measures to prevent the recurrence of massive breaches of personal data and improve their handling"[82]. Additionally, the Commissioner for the Right to Information recommended that the National Chamber of Notaries regulate the practice of offering online services, clearly defining rights and obligations and specifying consent for data processing as per the memorandum between the National Chamber of Notaries and NAIS[83]. Although the Digital Agenda mandates adherence to the General Data Protection Regulation (GDPR) for personal data processing, and despite the IDPC drafting an amended Law on the Protection of Personal Data along with 13 sublegal acts[84] for its implementation in 2021, this draft law has not yet been promulgated by Parliament[85]. The 2023 Progress Report states that Albania should "improve data protection, in particular by adopting the revised Law on personal data protection in full alignment with the EU acquis, by strengthening the independence and capacity of the Information and Data Protection Commissioner, and by awareness-raising measures"[86].

In terms of cybersecurity, the NAIS is responsible for implementing cybersecurity measures across electronic infrastructures. For example, in response to a request for information published in the Register of Requests and Answers on May 31, 2024, NAIS confirmed that the Albanian government signed a Memorandum of Understanding (MoU) with Microsoft Corporation[87] and is negotiating a similar agreement with Oracle

[81] Institute for Democracy and Mediation, cit. at 80, 7.
[82] European Commission, cit. at 61, 28.
[83] Institute for Democracy and Mediation, cit. at 80, 10.
[84] KDIMDP, *Raporti Vjetor 2022* (2023) [KDIMDP, Annual Report (2023)] 24.
[85] KDIMDP, *Programi i punës së zyrës së Komisionerit për të Drejtën e Informimit dhe Mbrojtjen e të Dhënave Personale Janar – Dhjetor 2024* (2024) [Work program of the office of the Commissioner for the Right to Information and Protection of Personal Data January – December] 6, at programi_i_punes_2024.pdf, last accessed 9 September 2024.
[86] European Commission, cit. at 61, 28.
[87] Council of Ministers Decision No 658, 6 December 2023, 'On the Authorisation of the Director General of the National Agency for Information Society to Negotiate and Sign the Renewal of the Strategic Partnership Agreement between the Council of Ministers of the Republic of Albania and Microsoft Corporation'.

Corporation. These agreements aim to support public administration efforts, including cybersecurity threat response, critical situation management, and AI development consultation[88]. However, there is a notable lack of information on the criteria and grounds for assessing the impact of regulations on algorithmic automation and AI. Regarding the protection of personal data, the legislation requires that data be used and processed in accordance with Law no. 9887/2008 on Personal Data[89]. Users are notified about the processing of their personal data every time they register or log in to the e-Albania portal for electronic services[90]. The same law provides for administrative penalties if public or private authorities fail to store state data within the territory of the Republic of Albania. In such cases, both public authorities and private entities have the right to file a complaint before an Albanian court[91]. There are no reports on court litigations targeting or emerging from AI use in the Albanian public administration and public service delivery.

Users seeking services through the e-Albania platform have the right to pursue administrative or court action. The DoCM on procedures for providing online services allows users to lodge administrative complaints under the rules set out by the Code of Administrative Procedures (CAP) and the relevant institution's legislation. Complaints can also be filed with the Agency for Dialogue and Co-Governance, either separately or simultaneously. These complaints typically concern situations where a state institution has failed to deliver a service or there are inconsistencies in the documents issued[92]. Currently, there is no data available on

[88] Agjencia Kombëtare e Shoqërisë së Informacionit, *Regjistri i Kërkesave Janar-Qershor 2024* (Skedar Excel, 2024), at https://akshi.gov.al/programi-i-trasparences/, last accessed 5 September 2024.

[89] Ligji Nr. 9887/2008, Për Mbrojtjen e të Dhënave Personale, i ndryshuar [Law No. 9887/2008, On the Protection of Personal Data, as amended] (Albania 2014); Law on Electronic Governance (2023); Regulation No. 2, dated 18 October 2022, "On the Functioning of the E-ALBANIA Single Government Portal Module", National Agency for Information Society, Article 5/e.

[90] Ligji Nr. 9887/2008, Për Mbrojtjen e të Dhënave Personale, i ndryshuar [Law No. 9887/2008, On the Protection of Personal Data, as amended] (Albania 2014), Article 46.

[91] Ligji Nr. 9887/2008, Për Mbrojtjen e të Dhënave Personale, i ndryshuar [Law No. 9887/2008, On the Protection of Personal Data, as amended] (Albania 2014), Article 55 and 56.

[92] Vendim Nr. 252, datë 29 prill 2022, Për Procedurat e Ofrimit të Shërbimeve On-Line nga Institucionet Shërbim Ofruese dhe për Metodologjinë e Monitorimit e të

the right to access codes. According to the NAIS Transparency Program, there is a lack of information in the annual report that the institution is required to publish[93]. Moreover, much of the transparency program's content is inaccessible[94]. Users of the e-Albania portal is entitled to obtain information under the Law on the Right to Information[95]. So far, the Electronic Register of Requests and Answers on the Right to Information has been implemented in more than 222 institutions.

7. Sectors Impacted by Algorithmisation and Technology

The industries most affected by the use of AI include welfare, healthcare, education, immigration, transportation, security, and justice. In security and law enforcement, AI is commonly used for risk assessments, surveillance, and predictive policing, despite concerns about privacy and bias. In welfare services, AI tools play a significant role in detecting fraud and automating the distribution of benefits[96]. Using a variety of technologies, from simple tools to sophisticated AI systems, algorithms have an impact on numerous industries. For example, biometric and facial recognition technologies are frequently employed in immigration and security to control borders and authenticate identities. Even though these systems work well, they raise privacy and fairness issues, especially in law enforcement, where prejudices might be strengthened. In order to prevent prejudice and protect privacy, legal frameworks such as the EU AI Act set restrictions on the use of such technology, particularly in areas like mass surveillance[97].

Kontrollit të Veprimtarisë Administrative të Ofrimit të Tyre [Decision No. 252, dated 29 April 2022, On the Procedures for Providing Online Services by Service Providing Institutions and the Methodology for Monitoring and Controlling the Administrative Activities of Providing Them].

[93] National Agency for Information Society, *Programi i Transparencës* (Webpage, 2024), at https://akshi.gov.al/programi-i-trasparences/, last accessed 5 September 2024.

[94] Qytetare and National Endowment for Democracy, cit. at 75.

[95] Law No. 119/2014, dated 18 September 2014, "On the Right to Information" (Official Gazette of the Republic of Albania No. 137, dated 6 October 2014).

[96] K. Vieth-Ditlmann, *The algorithmic administration: automated decision-making in the public sector*, at https://algorithmwatch.org/en/algorithmic-administration-explained/, last accessed 5 September 2024.

[97] Regulation (EU) 2024/1689 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013,

As Albania has implemented e-services, with an estimated 95% of public services—approximately 1,227 services—now being offered online, and a user-oriented administrative legal framework in place, there is a need for the country to align its legislation with the EU acquis and the European Interoperability Framework[98]. By August 2024, the number of registered users on the portal had reached 3,213,327[99]. Despite the government's decision to go 100% online, certain sectors have been more significantly impacted by the algorithmic automation of public administration. It should be noted that the Security and State Police sectors use these systems to analyse large datasets and manage resources more effectively. The provision of services through algorithmic automation includes the use of facial recognition technology and the implementation of intelligent cameras (CCTV) by the national police[100]. These intelligent systems are integrated into the national database. When it comes to immigration, the national police use algorithmic automation for border control. At Tirana International Airport, border control is managed through e-gates, allowing Albanian citizens to enter the country automatically. This automated process is estimated to take less than 30 seconds[101]. The implementation of automated control was made possible through a project in collaboration with IDEMIA[102], a company specialising in biometric security and identification. Automated decision-making

(EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act).

[98] Regulation (EU) 2024/903 of the European Parliament and of the Council of 13 March 2024 laying down measures for a high level of public sector interoperability across the Union (Interoperable Europe Act) OJ L, 2024/903.

[99] *Statistika*, August 2024 (e-albania.al), at https://e-albania.al/Default.aspx, last accessed 2 September 2024.

[100] Tema, *New legislation aims to modernize Albanian state police with AI technology* (26 July 2024), at <https://english.gazetatema.net/society/new-legislation-aims-to-modernize-albanian-state-police-with-ai-technolo-i336045>, last accessed 27 July 2024.

[101] Geek Room, *Ekskluzive: Kontrolli i automatizuar i kufirit do të zëvendësojë kontrollin policor në Aeroportin Ndërkombëtar të Tiranës* (8 April 2024), at <https://geekroom.al/tech/ekskluzive-kontrolli-i-automatizuar-i-kufirit-do-te-zevendesoje-kontrollin-policor-ne-aeroportin-nderkombetar-te-tiranes/>, last accessed 2 September 2024.

[102] IDEMIA, *Digitization of ID Documents: Albania Success Story* (2019), at https://www.idemia.com/wp-content/uploads/2021/02/idemia-digitization-id-documents-albania-success-story-201906.pdf, last accessed 5 September 2024.

technology is also used in processing visa applications, work permits, and residency permits[103]. The central institutions responsible for managing these processes are the General Directorate of Border and Migration in Albania and the National Employment and Skills Agency (NESA), especially when there is a request for a unique permit (combining residency and work permits). These automated processes are facilitated through the e-Albania and e-Visa platforms, with algorithms that ensure interoperability among the various institutions.

In the transportation sector, various infrastructure institutions have implemented algorithmic automation for tasks such as traffic management. The General Directorate of Road Transport Services currently offers several services through algorithmic automation, including confirmation of the current status of vehicles, attestation of driving licences, authorisation for obtaining driving licences, checking fines and integrating with payment systems, and applying for international driving licences, among others[104]. Furthermore, the National Traffic Management Centre will used algorithms to coordinate, plan, and control traffic flows in an automated manner. This centre is expected to become operational in 2025 and will also introduce weight sensors and central cameras to enhance crime prevention on national roads[105].

Regarding tax management, the General Directorate of Taxes is considered a pioneer in using algorithmic automation through the e-filing system. This automated system not only facilitates tax declarations but also cross-checks information from multiple sources and flags anomalies or discrepancies that may indicate potential tax evasion. There is an interconnected system between the documents issued by the same institution and the online payment system for tax obligations. Meanwhile, in the educational sector, the implementation of digital platforms follows a two-fold approach. First, there is an initiative by the Ministry of Education

[103] MB, *Procedura dhe dokumentacioni për pajisjen me Leje Qëndrimi dhe Leje Unike/Residence/Unique permit (Al – En)*, at https://mb.gov.al/procedura-dhe-dokumentacioni-per-pajisjen-me-leje-qendrimi-dhe-leje-unike/, last accessed 5September 2024.

[104] DPSHTRR, at https://www.dpshtrr.al/sherbime-online/e-albania, last accessed 5September 2024

[105] F. Çoçoli, *Qëndra Kombëtare e Monitorimit të Trafikut do shtojë sigurinë në rruge* (*SOT*, 6 September 2024), at https://sot.com.al/opinion-editorial/qendra-kombetare-e-monitorimit-te-trafikut-do-shtoje-sigurine-ne-rruge/, last accessed 5 September 2024.

to revise the curricula of primary and other schools to introduce courses related to AI and coding. Second, digital systems have been implemented in various service sectors, such as the Teacher Portal and the automation system for the 'Matura Shtetërore' [State] exams[106]. Additionally, the introduction of the Pre-University Information Management System (SMIP) allows for the production and management of grades through this system[107]. These systems are interoperable with the e-Albania portal. In line with the Digital Agenda of Albania, NAIS has facilitated the implementation of projects aimed at including ICT and Coding courses, reforming ICT teaching in pre-university education, adding smart labs to pre-university schools, and establishing new Smart Labs[108].

8. Conclusion

The Albanian Government has demonstrated clear political will as well as concrete steps to integrate AI into public administration. At the end of 2023, it announced a public procurement call for the use of AI in the processes of aligning the country's legal and regulatory framework with the European Union's, which did not proceed due to lack of competent companies[109]. Further, the parliament discussed amendments to public procurement law to make room to use AI in such processes[110], which resulted in legal changes in 2024 allowing the

[106] K. Saracini, *Digjitalizohet diploma e Maturës Shtetërore, Karçanaj: Me vetëm një klik në e-Albania* (8 July 2024), at https://ata.gov.al/2024/07/08/digjitalizohet-diploma-e-matures-shteterore-karcanaj-me-vetem-nje-klik-ne-e-albania/, last accessed 5 September 2024.

[107] Matura Shtetërore, *Digjitalizimi i Shërbimeve Arsimore* (13 August 2024), https://maturashteterore.com/2024/08/13/digjitalizimi-i-sherbimeve-arsimore/, last accessed 5 September 2024.

[108] Media Information Agency, *Laboratorët inteligjentë shtrijnë hartën e tyre digjitale në shkolla, për një edukim digjital cilësor të fëmijëve*, at https://mia.gov.al/rama-dhe-manastirliu-ne-shkollen-vace-zela-216-laboratore-te-rinj-ne-shkolla-zgjerojme-rrjetin-e-smartlabs-ne-654-shkolla-te-tjera, last accessed 5 September 2024.

[109] The National Agency for Information Society announced with Ref. No. 92202-12-27-2023 a tender with a funding limit of 279 million lek (approximately 2.6 million euros) for the project "Use of Artificial Intelligence in the Process of Transposing the Acquis for European Integration" in late 2023, which was annulled on 19 February 2024 for the lack of bidders that meet the required criteria.

[110] https://ata.gov.al/2024/02/05/prokurimi-publik-spiropali-inteligjence-artificiale-dhe-automatizim-i-proceseve/, last accessed 20 July 2024.

system to be developed using advanced artificial intelligence technology and robotic processes in accordance with European rules[111]. Although the Albanian government is committed to aligning the national legal framework with EU standards, the effective implementation of automated services and AI technologies remains a challenge for the country and its citizens.

In the light of recent cybersecurity attacks, Albania needs to focus on increasing its digital literacy. For the adoption of AI in public administration to streamline public services, ensure the protection of users' data and prevent algorithmic bias, stakeholders need to be involved in developing a legal framework with input from civil society, AI experts, and the private sector. Albania's current legislation on national data protection does not provide a risk-based approach as per the EU GDPR; this framework is still in the process of amendment to align it with the EU standards since 2022. There is currently a fragmentation of the legal framework regarding digital systems. Therefore, it is of the utmost importance that the approximation of the Data Protection Law and AI regulatory framework be harmonised, considering the fast pace of digital advances.

The widespread use of AI tools in services where sensitive data are handled has been criticised despite the existing regulatory models, which are few in number and lack transparency in their promulgation. Like other countries that have jumped the AI bandwagon, Albania is not left behind in using AI tools for decision-making and process automation. However, Albanian legislation needs to be analysed in order to identify specific revisions that would permit AI decision-making. Any legal revisions concerning AI require substantial input from experts in these fields, as well as interdisciplinary collaboration to develop regulatory protocols for AI within the country. Such a legislative framework must ensure the protection of democratic values and human rights.

[111] Law no. 16/2024 "For some additions and changes in law no. 162/2020 'For public procurement'", at: http://qbz.gov.al/eli/ligj/2024/02/08/16, last accessed 20 July 2024.

THE LAW OF THE ALGORITHMIC STATE IN BULGARIA

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Abstract

The article examines the legal framework and practical use of algorithms and artificial intelligence by organs of the public administration in Bulgaria. It reveals the existing lacunae in the law and reluctance on the part of the public bodies, which makes them ineffective and poses risks to the fundamental rights of individuals and democratic society. The paper provides a true and up-to-date snapshot of the issue explored, supported by a survey conducted directly with Bulgarian public institutions mapping the use of digital technology by the public authorities. In Bulgaria, the algorithmic state is perceived narrowly as E-government, and algorithmic technology is reduced to information and communication systems, thereby placing the focus predominantly on data security, data quality, and the interoperability of the systems at the expense of broader considerations. The study demonstrates that Bulgarian law and legal scholarship lag behind in dealing with the issue of automated decision-making in the public sector and in developing safeguards against potential infringements of human rights. Thus, it highlights the gaps to be filled by future legislation and scholarly debate on artificial intelligence (AI) implementation in the public sector.

TABLE OF CONTENTS

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1. Introduction

Bulgaria does not have a single comprehensive legal act dedicated solely to algorithmic automation and/or AI. While there is no specific act focused solely on those issues, there is a broader legal framework that sets out the foundation for the use of automated systems by the public authorities, which aims mainly to ensure the quality of the datasets, their security, stability and interoperability. Further, in June 2024, the European Union adopted Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on AI Act), which applies to both private and public bodies and which will be fully applicable in most parts from 2 August 2026[1]. Public authorities will mostly qualify as AI deployers and must become compliant with the applicable requirements introduced by the act. With the support of EU codes of practice, rules on generative-purpose AI and AI high-risk standardisation papers, etc. to be prepared in the future, Bulgarian the public authorities will have to classify different AI risk levels and meet the respective

[1] Certain provisions of the AI Act will take effect earlier; for example, Chapters I and II will apply from February 2, 2025. Other provisions, such as Article 6(1) and its related obligations, will come into effect on August 2, 2027.

obligations imposed for unacceptable, high, and limited AI risk categories.

Leaving aside the newly adopted AI Act in the EU, it is important to note at the outset that there is no clear understanding of the terms "automated algorithms" and "artificial intelligence" neither in Bulgarian legislation nor in legal scholarship. These terms are not present in the terminology and vocabulary of Bulgarian laws and therefore no legal definition for them is available.

2. Algorithmic Terminology in Bulgarian Law and Strategic Documents

2.1. Algorithms in Bulgarian Law

Bulgarian legislation tends to be quite resilient to incorporating any kind of algorithmic and technological aspects into governance and administration.

The analysis of the legal framework in Bulgaria reveals a very rare use of the term "algorithm" or its derivatives. Algorithms are acknowledged in a few legal acts regulating spheres that use them as expert tools, such as:

- "algorithm for the interaction between the institutions in the system of pre-school and school education and the directorates of 'social assistance', regarding the provision of support for the personal development of children and students"[2];
- "drug treatment algorithms" (Medicinal Products in Human Medicine Act[3]);
- "algorithms for the calculation of the mode factors and the quantity of combined electricity produced by combined heat and power installations" (Regulation No. RD-16-267 of 19 March 2008 on the Determination of the Amount of Electricity Produced from Combined Heat and Power Generation[4]).

These acts use the term "algorithm" in its most common meaning of a predetermined step-by-step set of rules or instructions

[2] Issued by the Ministry of Education and Science on 9 May 2019. The algorithm was agreed upon between the Minister of Education and Science and the Minister of Employment and Social Policy.
[3] Prom. SG. 30/13 April 2007.
[4] Issued by the Minister for Economic Affairs and Energy, Prom. SG 37/8 April 2008.

to be followed. They do not imply any reference to computer algorithms, algorithmic software, or similar. It should be noted, however, that such terminology has already started to become part of Bulgarian legislation, although not in the field of public law. In 2024 for the first time the concept of "algorithmic management" in the context of telework was introduced by the Labour Code[5].

Another legally defined algorithmic-related term is "algorithmic trade", which was introduced by the Markets of Financial Instruments Act[6] with the meaning of trade with financial instruments, in which the individual parameters of the order are defined automatically by a computer algorithm (§ 1, point 30 of the Additional provisions). The Lawyers Act[7] employs the phrase "algorithms of transferring information", which pertains to the submission of applications and the decisions of the Supreme Council of Advocates, respectively of the Councils of Advocates. These algorithms dictate how information is fed into the relevant fields of the information system, as determined by the Supreme Council of Advocates.

Insofar as the concept of the algorithmic state in Bulgarian law is largely embraced by the idea of the E-government, the regulation of algorithms in public law is essentially concealed in the terminology of "automated information systems", "automated processing", and "information and communication systems".

2.2. The Bulgarian National AI Strategy

The obscurity and confusion about the terms "algorithmic automation" and "AI" in Bulgaria is apparent in the existing national plans and strategies for digitisation and AI. The term "algorithm" is part of the definition of artificial intelligence in the Bulgarian AI Strategy, which itself forms part of the broad Bulgarian Digitalisation Strategy. In fact, in Bulgaria, AI and related issues are perceived from the perspective, and are considered part, of the digital transformation process.

In December 2020, the Bulgarian government published its National AI strategy: "Concept for the Development of Artificial Intelligence in Bulgaria until 2030" (the Concept)[8]. It builds upon

[5] Art. 107h, paragraphs 11 and 12, of the Labour Code, Prom. SG. 26/1 April 1986.
[6] Prom. SG 15/16 February 2018.
[7] Prom. SG 55/25 June 2004.
[8] At https://www.mtc.government.bg/en/category/157/concept-development-artificial-intelligence-bulgaria-until-2030, accessed 30 July 2024.

and enhances prior national strategy reports, including the Digital Transformation of Bulgaria 2020-2030[9] and the National Digital Bulgaria 2025 Programme with its roadmap[10]. Algorithms, algorithmic autonomous technologies, and related terms are not mentioned in those two strategic and action plan documents. The first document, on the Digital Transformation of Bulgaria 2020-2030, placed AI alongside technologies such as 5G networks, the Internet of Things, Big Data, robotics, blockchain, and 3D printing. The second document, on the National Digital Bulgaria Programme 2025, placed AI in the list of key technologies together with the "Internet of things", simulations, augmented/virtual reality (VR/AR), autonomous robots, cloud technologies (Cloud computing), three-dimensional/additive printing (3D printing), horizontal and vertical system integration, large data (Big Data), machine learning, intelligent mobile applications, blockchain technologies, digital platforms, etc. Artificial intelligence and machine learning are defined together as systems that exhibit intelligent behaviour by analysing their environment and, with some degree of autonomy, taking action to achieve specific goals. It is further pointed out that AI-based systems can exist on their own as software (e.g. voice assistants, image analysis software, search engines, voice and face recognition systems), or they can be implemented in hardware devices (e.g. advanced robots, autonomous cars, drones or "Internet of Things" applications).

Against this setting, the National AI strategy was based on a framework established by scientists working at the Bulgarian Academy of Sciences[11] and further developed by the experts at the

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[9] At https://www.mtitc.government.bg/sites/default/files/cifrovatransformaciyanabulgariyazaperioda2020-2030.pdf, accessed 30 July 2024.
This Strategy defines the vision and policy objectives for digital transformation of the Republic of Bulgaria up to 2030. It takes into account the goals of the UN 2030 Agenda for Sustainable Development and the use of new technologies to achieve them, as well as strategic documents of the European Commission: "Europe fit for the digital age", "Building Europe's digital future", "A new industrial strategy for Europe", etc.

[10] The National "Digital Bulgaria 2025" Program and Road Map for its implementation were adopted with Council of Ministers Decision No. 730/05 December 2019. See https://www.mtc.government.bg/en/category/85/national-program-digital-bulgaria-2025-and-road-map-its-implementation-are-adopted-cm-decision-no73005-12-2019, accessed 30 July 2024).

[11] See https://www.bas.bg/?p=24551&lang=en, accessed 30 July 2024.

Ministry of Transport, Information Technology, and Communications. The Concept has outlined policy initiatives for advancing AI in Bulgaria from 2020 to 2030. It has also identified main areas of impact such as infrastructure and data availability, research and innovation capacity, knowledge and skills, and building trust in society.

The Concept for the Development of Artificial Intelligence in Bulgaria by 2030 is the first document in Bulgaria defining AI. The definition is taken from the EU White Paper on Artificial Intelligence[12]: AI is a collection of technologies that combine data, algorithms, and computing power. The definition seems overarching enough to include numerous subspecies, which the document does not try to list as specific illustrations. Still, some idea of the Strategy's understanding of AI becomes visible from the statistics it provides for the applications of AI, particularly in the public sector. The strategy refers to EC – AI Watch – Artificial Intelligence in public services[13], showing data on the use of chatbots, intelligent digital assistants, virtual agents, and recommendation systems; predictive analytics, simulation and data visualisation; computer vision and identity recognition; expert and rule-based systems, algorithmic decision-making; natural language processing, text mining and speech analytics.

The Concept outlines the algorithmic foundations of AI by pointing out that the main elements that compose AI are "data" and "algorithms". The Strategy highlights two modern trends – data coming to the fore in the field of AI and a shift from algorithms to data in the field of machine learning. This observation ends in a proposal suggesting Bulgaria to focus on technological specialisation in the field of the data economy.

While the above-listed government documents demonstrate the benefits and advantages related to technology in the era of the fourth industrial revolution, they also express some concern, warning about potential threats and risks related to AI. These refer for instance to the possible lack of transparency in the decision-

[12] European Commission, White Paper on Artificial Intelligence: a European approach to excellence and trust, Brussels, 19 February 2020, COM(2020) 65 final, https://commission.europa.eu/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en, accessed 30 July 2024.
[13] EC – AI Watch – Artificial Intelligence in public services, 3 July 2020, https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/ai-watchartificial-intelligence-public-services, accessed 30 July 2024.

making process, invasion of privacy, disrespect for dignity, and risk of biased, manipulated, and discriminatory decisions. Topics of product liability and accountability are also vaguely sketched out without being further explored or analysed. Briefly, the documents make a statement for a trustworthy AI with a legal framework that safeguards human rights and freedoms. They recommend that ethical principles governing the design and deployment of AI systems be established early in the process. However, side by side with that, the documents raise concerns about AI design and use not being overregulated as this may stifle technological innovations and may have a chilling effect on digital transformation. In line with this, the Strategy recalls – and refers to – the Law on limiting administrative regulation and administrative control over economic activity[14].

Neither the national Programs nor the AI Strategy envisage a general national legal framework to regulate automated algorithmic technology and/or AI in the near future. Instead, there is a heavy reliance on EU legislation to provide legal regulation and foundation for digital transformation and AI. This holds true not only for general AI laws, but also for anticipated sector-specific regulations, such as those concerning the EU legislative framework for the cross-border acceptance of electronic information for freight transport and the harmonised EU rules governing cashless payments.

The national action plan includes empirical identification of potential threats, AI risk assessment, the drafting of sector-specific ethical guidelines, the formation of ethical commissions, the establishment of public-private partnerships, and the creation of public-private datasets.

Technology is postulated as a means, not an end, in digital transformation. As far as public authorities are concerned, the Strategy for digital transformation sets a goal of enhancing the effectiveness of public services and facilitating a transition from traditional data to linked data. Practically, this is understood as making administrative services digitally accessible, shifting to large-scale electronic communication between citizens/businesses and the state, and eliminating the use of paper documents to the benefit of electronic ones. In the AI Strategy, public authorities are considered "AI users", and the AI legal framework is presented as

[14] Prom. SG 55/17 June 2003.

a sector enabling and creating conditions for the development and deployment of AI.

3. Bulgarian e-Government and the Introduction of Automated Systems

To date, there is neither a general national legal basis for the use of algorithmic automation and/or AI, nor specific rules applicable in this area for public authorities. Bulgarian legislation does not impose any legal prohibition on the use of algorithmic automation or AI by public bodies. Although there are no specific rules that explicitly encourage public authorities to experiment with algorithmic automation and/or AI, there do exist legislative provisions that allow such use and experimentation. In Bulgaria, AI-related technology and its applications in the public sector are seen as part of the digital transformation of public administration. Therefore, the primary focus is on the concept of electronic government, coming with administrative services provided via electronic means that require massive datasets and systems, enabling the automated interoperability of databases.

The legal framework for e-Government is mainly concerned with building the digital infrastructure, which will ensure the foundations for the efficient provision of administrative digital services. Therefore, applicable legislation predominantly governs the construction and use of automated systems in the public sector and encompasses laws and regulations related to digital governance, data protection, electronic communications, and cybersecurity. Some acts set out the general framework for building e-Government; others refer to specific sectors; still other pieces of legislation deal with the digital data infrastructure and information exchange. This results in fragmentation of the legal framework and the overlap of legal domains.

3.1. The General Framework

The key Bulgarian legal acts that establish the framework for e-Government are listed below.

The E-Government Act (EGA)[15] sets forth the principles and guidelines for the implementation of electronic governance in Bulgaria. It deals with electronic documents, electronic registers,

[15] Prom. SG. 46/12 June 2007.

and administrative services provided via electronic means, the use of information and communication technologies by the public administration, etc. The act explicitly states that it does not apply to classified information or the operations of the Ministry of Defence, the Ministry of the Interior, the State Agency for National Security, the State Intelligence Agency, the State Agency for Technical Operations, the "Military Intelligence" Service, and the National Service for Protection, except in cases involving the provision of administrative services by electronic means and the exchange of electronic documents between administrative authorities.

The EGA promotes the use of information and communication technologies (ICT) by public authorities to improve the delivery of electronic administrative services, enhance automation of the administrative process, and ensure the efficient and effective functioning of the institutions. One of its primary aims is to regulate how the institutions utilise ICT (Article 1, paragraph 1, item 5). Those systems are defined as technologies for creating, processing, storing, and exchanging digital information in various formats supported by hardware (§ 1, p. 40 Additional provisions).

The EGA provides the legal basis for automating electronic administrative services and sets up the legal framework for the automated exchange and processing of electronic documents. It ensures the interoperability of the automated systems, which can communicate and share data. This interconnection of the automated systems strengthens seamless data exchange and flawless service delivery. It further mandates the implementation of security measures to protect automated systems and the data they process. It also requires measures to ensure the integrity and authenticity of electronic documents and automated transactions; it also provides for the use of electronic identification.

The specific technical requirements for information systems and the requirements for automated exchange of electronic documents as internal electronic administrative services are set out in the Regulation on the general requirements for information systems, registers, and electronic administrative services[16]. The Regulation addresses various issues, including the technical requirements for accessing electronic administrative services, policies for graphical and other interfaces used by electronic

[16] Adopted by Decree of the Council of Ministers No. 3 of 9.01.2017, Prom. SG 5/17 January 2017.

administrative service providers, and formats and mandatory requisites for electronic documents. It also covers specific requirements for information systems, methods for establishing the integrity and authorship of electronic statements, procedures for storing electronic documents, maintaining the register of standards, and periodic data backup and storage.

The key principles for information and communication systems: accessibility, integrity, availability, and confidentiality of information throughout their entire life cycle – creation, processing, storage, transfer, and destruction, are further detailed in the following secondary legislation:

– Regulation on the Terms and Conditions for Determining the Measures for the Protection of the Information and Communication Systems of Strategic Sites Important for National Security and Implementation of Control[17];

– Regulation on the Minimum Requirements for Network and Information Security[18];

– Regulation on the Security of Communication and Information Systems[19].

The security and stability of information systems are further strengthened by the Cyber Security Act[20] and Regulation (EU) No 910/2014 of the European Parliament and the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market, which repeals Directive 1999/93/EC. The Bulgarian Cyber Security Act[21] establishes the framework for safeguarding network and information systems in Bulgaria against cyber threats. By definition, these systems encompass any device or group of interconnected devices that automatically process digital data through a program, as well as the digital data stored, processed, retrieved or transmitted by such systems.

The Electronic Communications Act[22] governs the provision of electronic communication networks and services in Bulgaria. It

[17] Adopted by Decree of the Council of Ministers No. 256 of 10 October 2019, Prom. SG 81/15 October 2019.
[18] Adopted by Decree of the Council of Ministers No. 186 of 26 July 2019, Prom. SG 59/26 July 2019.
[19] Adopted by Decree of the Council of Ministers No. 28 of 24 February 2020, Prom. SG 18/28 February 2020.
[20] Prom. SG. 94/13 November 2018.
[21] Prom. SG. 94/13 November 2018.
[22] Prom. SG. 41/22 May 2007.

sets out the legal requirements for electronic communications, including those involving automated systems and services, to ensure security, reliability, and data protection.

Information systems are subject to legal regulations even during the preparation of public procurement bidding documentation. When public procurement involves the construction and upgrading of the software components of information systems, the technical assignments and specifications must be prepared in a standardised form as mandated by law[23].

It should be further added that the General Data Protection Regulation (Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC – GDPR), which provides a comprehensive framework for data protection and privacy in the European Union, applies in Bulgaria. It regulates the processing of personal data by automated means, ensuring that individuals' privacy rights are protected. The standards and requirements established by GDPR are implemented and further reinforced in Bulgaria by the Protection of Personal Data Act (PPDA)[24], the Electronic Communications Act[25], and the E-Commerce Act[26].

3.2. Automated Systems in Special Sectors

In daily operations, public authorities rely on automated systems mostly for keeping records and information exchange among the institutions. The use of such automated systems is regulated in parliamentary and secondary legislation. Examples of sector-specific regulations dealing with information systems in their respective fields include the following:

- Article 378 of the Judiciary Act[27] establishes a "Unified Information System for Combating Crime", comprising a collection of automated information systems. This system includes a central component (core) that connects to the systems of the judiciary and

[23] Art. 35, para. 3 of the Regulation on the general requirements for information systems, registers and electronic administrative services.
[24] Prom. SG. 1/4 January 2002.
[25] Prom. SG. 41/22 May 2007.
[26] Prom. SG. 51/23 June 2006.
[27] Prom. SG. 64/7 August 2007.

the executive, processing information on events and objects, and providing integrated information for crime prevention activities.

– The Ministry of Interior Act[28] mentions several automated systems, such as the centralised electronic system and automated technical means for traffic control (Article 98), the Automated Fingerprint Identification System "EURODAC" (Article 50a, item 5), and integrated and automated systems for observation (Article 102, paragraph 1, item14). Additionally, the Regulation on the procedure for creating and removing police registration[29] indicates that the police authorities use not only the Automated Fingerprint Identification System (AFIS) but also the Automated Information System (AIS), "Integrated Regional Police System (IRPS)", and other automated information funds for general use of the Ministry of the Interior.

– According to the Protection of Public Order at Sporting Events Act[30], the Minister of the Interior is responsible for establishing and maintaining a Joint Automated Register. This register contains data about individuals subject to penalties, compulsory administrative measures or sanctions for unlawful behaviour during sporting events, etc.

– Regulation No. 1 of 8 January 2008 on automated information systems in the judiciary[31] outlines the procedures for creating, implementing, using, and developing AIS within the judiciary. The information services for judicial activities must be based on AIS approved by both the Supreme Judicial Council (SJC) and the Minister of Justice.

– Article 15 of the National Emergency System with a Single European Call Number 112 Act[32] mandates that outgoing and incoming calls at 112 Centres be automatically recorded in an emergency call register. The National Emergency Centres must establish contact points for information exchange with the 112 Centres and create positions for trained employees to ensure continuous, direct, and automatic interaction with the information system of the 112 Centres. It is noteworthy that the operators at 112 Centres are prohibited from collecting information related to a

[28] Prom. SG. 53/27 June 2014.
[29] Adopted by Decree of the Council of Ministers No. 336 of 24 October 2014, Prom. SG 90/31 October 2014.
[30] Prom. SG. 96/29 October 2004.
[31] Issued by the Minister of Justice, Prom. SG. 6/18 January 2008.
[32] Prom. SG. 102/28 November 2008.

caller's race, ethnicity, origin, religion, beliefs, political affiliation, personal or social status, sexual orientation, or property status.

– Regulation No. 48 of 1 March 2012 on the conditions and procedure for the functioning of the national early warning and announcement system for the executive authorities and the population in the event of disaster and air hazard notification[33] mentions the existence of an Automated Public Announcement System, maintained by the Ministry of Interior.

– Regulation No. 15 of 13 April 2011 on air navigation information services[34] mandates the implementation of an Automated Air Navigation System for pre-flight information. This system ensures that air navigation service providers supply specific information, which will be accessible to flight operations personnel, including crewmembers, for self-study, flight planning, and flight information services.

– Regulation No. H-2 of 30 May 2007 on the technical and functional requirements for automated systems for material accounting in duty-free trade outlets[35] lays down the minimum technical and functional requirements for these automated material record-keeping systems in duty-free outlets, as well as the procedure for their approval. The automated systems provide a permanent and continuous electronic connection in real-time with the customs office at the location of the duty-free outlet for the automated transmission of all data from the fiscal devices contained in the fiscal receipt for sales made in the duty-free outlet.

– Regulation No. H-6 of 21 December 2022 on the functioning of the National Health Information System[36] regulates the conditions and procedures for maintaining the registers, information databases, and systems within the NHIS, as well as the exchange of information with other registers, databases, and systems, and access to information in electronic health records. The NHIS is designed as an integration platform with e-Government resources, facilitating remote medical services such as telemedicine, tele-diagnosis, and telemonitoring, in accordance with normative acts.

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[33] Adopted by Decree of the Council of Ministers No. 48 of 1 March 2012, Prom. SG. 20/9 March 2012.

[34] Issued by the Minister of Transport, Information Technologies and Communications, Prom. SG. 37/13 May 2011.

[35] Issued by the Minister of Finances, Prom. SG. 45/8 June 2007.

[36] Issued by the Minister of Healthcare, Prom. SG. 103/24 December 2022.

- Regulation No. 50 of 15 February 2021, on the terms and conditions for registration and identification of participants and the storage of data on organised online betting within the territory of the Republic of Bulgaria, and for the submission of gambling information to a server of the National Revenue Agency[37] mandates the automated submission of information and online registration of each transaction in the National Revenue Agency (NRA) system for online betting, electronic gaming, and gaming under the Gambling Act[38].
- Regulation on the conditions and procedures for the creation, maintenance, and use of the information systems of the cadastre and the property register, for access to the data in them, and access to the data in other specialised information systems[39] sets the rules for automated services delivered by the systems of the cadastre and the property register, automated data exchange via electronic means between the two systems, automated access to systems, and automated notifications sent to a specified email address or through a mobile service operator.
- Instruction No. I-1 of 12 April 2016 on the Conditions and Procedures for the Exchange of Information between the Bodies of the Ministry of the Interior and the Customs Agency through Access to Automated Information Systems includes the use of AIS in its title[40].
- Instruction No. I-3 of 16 May 2024 on the Conditions and Procedure for Organising, Maintaining and Accessing the Electronic Register of Servicemen and Civilian Employees provides for an Information System referred to as "Automated Human Resources Management System"[41].
- Rules for the Automated Information Systems in the Sofia Municipality[42] stipulate that AIS must be developed and constructed to function as integrable components within the phased establishment of the E-municipality, ensuring integration where necessary and feasible.

[37] Adopted by Decree of the Council of Ministers No. 50 of 15 February 2021, Prom. SG. 14/17 February 2021.
[38] Prom. SG. 26/30 March 2012.
[39] Prom. SG. 79/08 September 2020.
[40] Issued by the Minister of Finance and the Minister of the Interior, Prom. SG. 32/22 April 2016.
[41] Issued by the Minister of Defence, Prom. SG. 45/28 May 2024.
[42] Adopted by Resolution No. 814 of Minutes No. 28 of 18 December 2008 of Sofia Municipal Council.

3.3. Infrastructures for Digital Data Management

In addition to general and sectoral legislation on e-Government, there are several other automated systems for data storing and sharing.

Art. 15d of the Access to Public Information Act[43] provides that the Ministry of e-Government shall establish and maintain an Open Data Portal[44]. The Open Data Portal is a unified, central, web-based public information system designed to publish and manage reusable information in an open, machine-readable format, complete with associated metadata. It is established to ensure that public sector organisations in Bulgaria fulfil their obligations under Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information, amending Directive 2013/37/EU of 26 June 2013. The procedure for, and manner of, publishing the respective public information are determined by a regulation adopted by the Council of Ministers[45].

Further, in accordance with the requirements of Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007, establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), and with Art. 12, para 4 of the Spatial Data Access Act[46], the Ministry of e-Government has developed and maintains a National Spatial Data Portal (INSPIRE)[47]. The portal is robust and user-friendly, offering quick access to all available content of the spatial data sets in a machine-readable format, as specified by the Directive and national law. It allows Bulgarian public administration authorities responsible for collecting, creating, maintaining, and disseminating spatial databases, as well as providing public services, to have shared access to the spatial information datasets they manage and the statutory services related to them. The national portal is linked to the INSPIRE geoportal.

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[43] Prom. SG 55/7 July 2000.

[44] See https://data.egov.bg/, accessed 30 July 2024.

[45] Regulation on Standard Conditions for the Re-use of Public Sector Information and for its Publication in Open Format, Adopted by Decree of the Council of Ministers No. 147 of 20 June 2016 (Prom. SG 48/24 June 2016).

[46] Prom. SG. 19/9 March 2010.

[47] See https://inspire.egov.bg/, accessed 30 July 2024.

Another important data infrastructure is the RegiX inter-registry exchange[48] environment, established in 2014. The RegiX inter-registry exchange enables automated connections among Bulgarian administrative authorities and the registers and information systems they manage. This inter-registry exchange system offers access to registers via a central component, ensuring compliance with interoperability and data exchange requirements. In 2017 by a Council of Ministers' decision,[49] the government implemented measures to reduce the administrative burden on citizens and businesses by eliminating the requirement to submit certain official certification documents in paper form. Technically, the interconnection of the information systems was enabled and facilitated by the inter-registry exchange environment (RegiX). Several certification services were included, enabling the public administration to conduct register queries and automatically retrieve data electronically from various registers, such as the Register of the Population[50], the National Register of Bulgarian Personal Documents,[51] the Joint Register of Foreigners[52], the Register of Institutions in the Preschool and School Education System[53], the Register of completion records for primary education, secondary education, and vocational qualifications[54], the BULSTAT Register[55], the Property Register[56], the Commercial Register[57], the

[48] See https://info-regix.egov.bg/public, accessed 30 July 2024.
[49] Decision issued by the Council of Ministers No. 338/23 June 2017.
[50] Established under the Civil Registration Act (Prom. SG. 67/27 July 1999).
[51] Established under the Bulgarian Personal Documents Act, Prom. SG. 93/11 August 1998.
[52] Established under the Foreigners in the Republic of Bulgaria Act, Prom. SG. 153/23 December 1998.
[53] Established under the Pre-school and School Education Act, Prom. SG. 79/13 October 2015, in force from 01 August 2016.
[54] Regulation No. 8 of 11 August 2016 on Information and Documents for the Pre-school and School Education System for Documents Issued after 1 January 2007, Prom. SG. 66/23 August 2016.
[55] Established under the BULSTAT Register Act, Prom. SG. 39/10 May 2005. The BULSTAT register is an integrated electronic centralised register, maintaining a national data base of non-profit legal entities, joint-venture partnerships, free-lancers, artisans, foreign corporations, or their branches operating in Bulgaria, etc.
[56] Established under the Cadaster and Property Register Act, Prom. SG. 34/25 April 2000.
[57] Established under the Commercial Register and the Non-profit Legal Entities Register Act, Prom. SG. 34/25 April 2006.

Register of Obligations to the Customs Administration[58], and the Register of Administrators and Personal Data Processors who Have Appointed Data Protection Officers[59]. The Minister of e-Government oversees the Register of Registers, which catalogues the registers and databases of primary data controllers. This register of information is maintained as part of the Integrated Information System of the State Administration.

Another decision by the Council of Ministers of 2017 mandated that by 1 September 2017, all administrative authorities in Bulgaria had to update their electronic document exchange systems to comply with a joint technical protocol approved by the Chairman of the State Agency for Electronic Government[60]. An Electronic Messaging Environment (EME) was implemented to streamline document management and flow within the entities of the public administration. For administrations without the technical resources to join the EME, the State Agency for Electronic Government has provided an alternative temporary solution for electronic document exchange: the Secure Electronic Service System[61].

The Ministry of e-Government's project "Cloud e-services for the Administration" is also noteworthy[62]. The project aims to implement an automation platform on the State Hybrid Private Cloud to reengineer and automate work processes in central, regional, and municipal administrations. It will integrate with centralised e-Government systems and the specialised systems of administrative bodies and create a catalogue of automated e-Government services. The project will analyse, optimise, and automate work processes in two phases: one for central and regional administrations, and another for municipal administrations, including the Municipality of Sofia.

The government is further developing an Information System for Centralised Construction and the Maintenance of

[58] Regulation No. H-9 of 7 November 2018 on the Registers Maintained by the Customs Agency, issued by the Minister of Finance, Prom. SG. 94/13 November 2018.

[59] Established under the Protection of Personal Data Act, Prom. SG. 1/04 January 2002.

[60] Decision issued by the Council of Ministers No. 357/29 June 2017.

[61] See https://edelivery.egov.bg, accessed 30 July 2024.

[62] See https://egov.government.bg/wps/portal/ministry-meu/home/programs.projects/projects.progress/cloud-e-service, last accessed 30 July 2024.

Registers[63]. This system aims to automate and optimise processes, reducing data duplication and inconsistencies across different administrative bodies' registers. It will enhance interoperability, control, and monitor data access and dissemination through the implementation of an Interoperability Reference Architecture.

3.4. The Legal Framework for Information Exchange in Public Administration

As the above measures on public data infrastructure show, data exchange is mandatory for state and local government institutions. The unified electronic communication network (EESM) is designed to integrate the corporate networks of ministries, departments, and local administration into a cohesive national information infrastructure while maintaining their information independence, autonomous management, and preventing unregulated access to transmitted information. EESM supports simultaneous transmission of data, voice, and video with guaranteed quality.

In the Republic of Bulgaria, numerous laws address data exchange within public authorities and between the executive and the judiciary. The legislation primarily facilitates free data exchange among public bodies and institutions, rather than focusing on detailed legal procedures. For example, Article 106, paragraph 6 of the Civil Registration Act[64] stipulates that data from the Unified System for Civil Registration and Administrative Service of the Population (USCRASP) is provided free of charge to all providers of electronic administrative services in Bulgaria. Additionally, Chapter 4 of the BULSTAT Register Act[65] details the interaction between the BULSTAT register and other registers, information systems, and government departments and agencies.

In certain instances, public administration departments coordinate their interaction and data exchange through joint secondary legislation, such as Instructions No. I-3 of 26 October 2017 on the Interaction and Exchange of Information Between the National Revenue Agency and the Ministry of Employment and

[63] See https://e-gov.bg/wps/portal/agency/all-projects/projects-DAEU/projects-opdu1/project%20developing%20raos%20and%20iscipr, last accessed 30 July 2024.
[64] Prom. SG. 67/27 July 1999.
[65] Prom. SG. 39/10 May 2005.

Social Policy[66]. In other cases, information exchange is managed through mutual collaboration agreements.

For example, a centralised digital data management infrastructure, based on virtualisation, hosts the servers for the National Revenue Agency's information systems. The NRA utilises interfaces to exchange data with other public authorities, involving connections between databases and servers. Information exchange with other public bodies is conducted according to agreements for interaction with external organisations, which include various procedures and rules governing data exchange between the NRA and other institutions or organisations.

4. Public Authorities' Reliance on Algorithmic Automation in Daily Operations

In general, public administration in Bulgaria does not rely on algorithmic automation or AI in its daily operations. The algorithms used in their daily activities or interactions have rarely been publicised. This statement is made on the basis of the answers given to the authors by major Bulgarian government bodies and administrations.

To accurately and diligently answer the questions in the questionnaire, we conducted a preliminary survey and submitted a request for access to public information under the Access to Public Information Act[67]. According to this act, public information encompasses any information related to life in society in the Republic of Bulgaria, enabling citizens and entities to form their own opinions on the activities of the public bodies required to provide such information. The request asked relevant authorities to supply public information addressing the questions in the questionnaire.

26 out of 29 authorities granted us full access to their information, while three authorities refused us access on the grounds that the requested information was classified. Only five of the authorities that granted access answered positively and stated that they use algorithmic automation or algorithmic technologies. Neither of them returned a reply stating they currently use AI. Still, most of them indicated that they are obliged by law to create, keep,

[66] Issued by the Minister of Finance and the Minister of Labor and Social Policy, Prom. SG. 88/3 November 2017.
[67] Prom. SG. 55/7 July 2000.

use, and maintain information systems and registers, where information is accessible, and presented in formats that are machine readable, with ensured interoperability and the possibility of integration with the interface for the exchange of information.

A possible explanation for the large discrepancy between positive and negative replies concerning the practical use of automated algorithms may be the varying degrees of sector-specific aptitude to apply such algorithms and the disparity of the respondents (mostly ministries, only one municipality, and few government agencies). However, the lack of a clear and uniform understanding of the term "algorithmic automation" could also be a plausible explanation.

This lack of definition or commonly accepted understanding of what algorithmic automation systems or other similar concepts mean makes it possible that even at the moment public administrations practically use algorithms in their daily work without being legally obliged to disclose their use, logic, and mechanism. In its end, this imperils transparency and accountability of the public administration for the use of automated algorithms and/or AI. This regulatory gap is expected to be filled by the new AI Act.

The digital transformation of the public administration in Bulgaria appears to be taking place in stages and seems to be lagging behind more technologically advanced countries. Bulgaria is making strides in integrating algorithmic automation into public administration, though the levels of adoption and sophistication of this technology may vary. At this point, the focus is on efficient e-Government with smooth electronic communication between administration and citizens/businesses, swift and flawless digital administrative services, and secure and stable databases and registers with seamless operational compatibility between them. Efforts to enhance e-government services, as demonstrated above in section 2, aim to increase the efficiency of the public authorities through the automation of various administrative processes like issuing documents, processing of applications for permits and licences, managing public records, conducting compliance checks, and providing online services to citizens and businesses. It is expected that the next phase of customer service will involve the use of chatbots and automated response systems to handle customer inquiries. Thus, levels of automation should shift from technologies that help the administration do away with low-

valued, manual and routine work to technologies that assist humans make decisions and carry out more complex and abstract tasks or finally replacing humans in the decision-making process.

What follows describes the current and prospective uses of algorithmic automation and AI by the Bulgarian administration.

4.1. Current Uses

There are already some notable examples of algorithmic automation in Bulgarian public administration.

For instance, the National Revenue Agency employs automated systems to identify discrepancies[68], monitor compliance with tax laws, streamline processes, and improve the accuracy of tax-related operations and fraud detection. A specific software carries out automated analysis of requests for tax refunds, distant electronic audits[69] as well as automated processing of debtor identification, facilitating the issuance of preservation orders at the debtor's employer[70]. In its reply, the Agency reported it does not use currently AI-driven technologies, but added that steps are being taken to integrate AI to automate information provision and respond to inquiries from citizens and businesses. Ongoing efforts are focused on incorporating AI into specific business processes within the NRA.

The Ministry of Regional Development and Public Works maintains centralised electronic registers – such as the National Population Database, the National Electronic Register of Civil Status Acts, the Register of Unique Civil Numbers, and the National Classifier of Permanent and Present Addresses – that operate at national level operate in full compatibility. They use hi-tech technologies and largely rely on algorithmic automation.

The Ministry of Interior declined to disclose information about their use of AI and algorithmic technologies in their daily operations, stating that this information is classified. Nevertheless, it is evident that their officials and administration heavily rely on such technologies. In July 2023, Bulgaria ratified the Agreement between the Parties to the Police Cooperation Convention for

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[68] https://nra.bg/wps/portal/nra/actualno/nap-preduprejdava-firmi-s-golemi-materoalni-zapasi.

[69] https://pronewsdobrich.bg/izkustven-intelekt-vrashta-sumi-bez-nuzhda-ot-reviziya-i-nasochva-nap-kam-riskovi-igrachi-p169994.

[70] https://www.segabg.com/hot/category-economy/nap-ryazko-uvelichi-zaporite-vurhu-zaplati-i-pensii-na-dluzhnici.

Southeast Europe on the Automated Exchange of DNA Data, Dactyloscopic Data and Vehicle Registration Data[71]. This agreement includes various automated systems such as the AFIS database, a fully automated online search procedure, and automated searching and comparison of DNA profiles.

At the beginning of 2024, the Energy and Water Regulatory Commission started using a specialised software model for energy market analysis. This is an AI-enabled analytical tool, which detects suspicious transactions and alarms for possible market manipulation in the energy markets. The model is designed to ensure the swift and accurate detection and investigation of potential abuses by market participants on natural gas and electricity exchanges.

In recent years the Bulgarian government has been mainly concerned with "digital identity" for citizens, businesses, and government agencies as it is crucial in supporting digital transformation, improving security and enhancing user experiences when accessing both public and private services in the digital age. The Ministry of e-Government has introduced a variety of technologies and policies designed to establish and verify identities in digital spaces. Digital identities began to be used across different systems and in various public and private sectors, including e-Government services, online banking, e-healthcare, e-commerce, etc.

The level of use of algorithmic technologies and AI by the Police and Security sector in Bulgaria is not publicly verifiable, as this information is deemed classified. However, considering Bulgaria's participation in EU and international police cooperation and its integration with systems like the Automated Fingerprint Identification System "EURODAC" and the AFIS database, it can be inferred that Bulgarian police authorities employ facial and biometric recognition technologies, along with other advanced and AI-driven technologies.

Certain cities in Bulgaria have adopted smart traffic management systems that utilise algorithms to optimise traffic flow and reduce congestion. Other cities also plan to implement systems with hundreds of smart video cameras and employ AI for traffic control. The Sofia Municipality Council is considering the use of AI-

[71] Prom. SG. 58/7 July 2023.

driven devices to control and monitor the condition of the municipality's roads.

The digitalisation of healthcare records and automations of some aspects of healthcare management are currently in progress. These steps will improve patient's electronic health dossier management and support diagnostic processes.

4.2. Future Administrative Integration in an AI-Empowered World

Three government ministries are preparing to implement AI in their operations soon[72]. The Ministry of Education and Science will build high-tech, AI equipped classrooms, enhancing connectivity and educational tools to foster an advanced learning environment. The Ministry of Employment and Social Policy plans to develop a platform with adaptive-analytical software capable of learning, processing, and analysing data related to social and solidarity economy. Meanwhile, the Ministry of Health is set to create a National digital platform for medical diagnostics, leveraging AI to enhance the accuracy, speed, and accessibility of healthcare services.

In March 2024, the Bulgarian Institute for Computer Sciences, Artificial Intelligence and Technologies (INSAIT) unveiled BgGPT, the first open language model specifically adapted to the Bulgarian language. Designed to serve the needs of the Bulgarian government, science, business and all Bulgarian citizens, BgGPT represents a significant step in the country's AI strategy[73]. INSAIT has a large-scale strategy for the development and implementation of artificial intelligence in Bulgaria, working closely with private entities and public bodies, including the National Revenue Agency (NRA), which provide data to train the model.

BgGPT is built on the open-source Mistral-7B model, allowing Bulgarian companies and institutions to implement AI with minimal costs, in stark contrast to the substantial expenses associated with proprietary models. INSAIT has encouraged public

[72] This was announced in February 2024 by the Minister of e-Government in a written response to a parliamentary inquiry regarding the integration of AI in the public administration. See https://www.parliament.bg/bg/topical_nature/ID/60019, accessed 31 July 2024.

[73] See https://bggpt.ai/, accessed 31 July 2024.

authorities to adopt BgGPT, making it likely that Bulgarian citizens will soon interact with AI when engaging with the NRA and municipal administrations[74].

The National Evaluation and Accreditation Agency[75], responsible for monitoring the quality in higher education institutions and scientific organisations, is developing an artificial intelligence chatbot to function as an intelligent search engine for information related to the agency's activities. This chatbot will make information about the assessment and accreditation procedures for higher education institutions and scientific organisations more accessible. The planned technologies are categorised as "AI-driven technologies" and their development has been outsourced.

Currently, pilot projects are being explored within the Sofia Municipality administration to implement algorithmic technologies for enhancing internal work processes. These technologies are utilised in the Architecture and Urban Planning Department through the Unified Information System for issuing administrative acts and providing information to users via the Viber channel.

In May 2024, the Bulgarian government approved an agreement to be signed between the Republic of Bulgaria and the International Bank for Reconstruction and Development where the Bank will consult the government specifically on the digital transformation of the public sector.

4.3. Software Development and Training

In developing such measures, Bulgarian public authorities rely mainly on private bodies with recognised expertise in the software development and engineering. For instance, the entire infrastructure for digital data management was developed by private IT companies through public procurement contracts. The Open Data Portal was created by Finite Software Systems EOOD, the National Spatial Data Portal (INSPIRE) was developed by MAPEX AD, and the RegiX inter-registry exchange environment was established by TEHNOLOGIKA EAD[76]. The AI software for combating fraud on the natural gas and electricity exchanges was developed jointly by a team of IBM – "IB ES – BULGARIA" EOOD

[74] See https://bnr.bg/post/101955825, accessed 31 July 2024.
[75] See https://www.neaa.government.bg/en/, accessed 31 July 2024.
[76] On both these registries, see above section 3.3.

and the Energy and Water Regulatory Commission[77]. The National Assessment and Accreditation Agency, which is planning to implement an AI-powered chatbot to function as an intelligent search engine for information related to the agency's activities, contracted an independent contractor for developing the chatbot[78].

All government agencies in Bulgaria provide essential training to their staff employees on the use of various technologies. The Regulation on the Minimum Requirements for Network and Information Security[79] mandates that all entities under its jurisdiction ensure, through internal rules and instructions, that employees involved in relevant processes and activities possess the necessary qualifications, knowledge, and skills to fulfil their responsibilities. This is to minimise the risk of incidents, whether intentional or unintentional.

For example, in the first six months of 2024, staff at the Ministry of Finance successfully completed training on the following topics:

- Collaborative working in a digital environment;
- Information and Media Literacy;
- Fundamentals of Remote Sensing and GIS, High Value Data Processing;
- New technologies in management - blockchain;
- New technologies in management - AI and machine learning;
- New technologies in management - the world of data;
- Cybersecurity: Trojan horse and social engineering;
- Social networks in the public sector - creation and governance;
- Protecting privacy in a digital environment;
- Interactive video and online presentations with Prezi;
- Introduction to Information and Cyber Security (for non-IT experts).

In April 2022 the Minister of Education and Science officially established the terms and conditions for attaining AI expertise in Regulation No. 6 of 7 April 2022 concerning the Acquisition of Qualifications in the Profession "Artificial Intelligence

[77] On this software, see above section 4.1.
[78] See above section 4.2.
[79] Adopted by Decree of the Council of Ministers No. 186 of 26 July 2019, Prom. SG 59/26 July 2019.

Programmer"[80]. The National Agency for Assessment and Accreditation regularly organises training for its employee to enhance their knowledge of new technologies and particularly how to make full use of their access to the registers of the National Centre for Information and Documentation (NACID).

5. Legal Requirements for AI Use to Protect Individuals and Ensure Accountability in Public Administration

To this moment, there is no public awareness or attention in Bulgaria for the possible threats automated algorithms may create for fundamental rights and democratic society. There are no overarching legal requirements concerning privacy, impact assessments, transparency duties, the right to access codes, etc., that apply to the reliance on algorithmic automation/AI by public administration. Instead, the requirements for reliance on algorithmic automation/AI are dispersed across various legal acts and refer predominantly to the quality of datasets, protection of personal data, cybersecurity, and security of the systems and their contained data.

There are substantial rules in both EU and national law governing the security of the information systems and the integrity of the data they contain. These legal safeguards ensure the accuracy and completeness of information, preventing alteration or tampering, and maintaining consistency throughout its lifecycle. Authentication requirements prevent unauthorised access. Additionally, the systems' security is bolstered by comprehensive technical standards and mechanisms for reporting incidents. The network and information systems must be reliable and consistently execute their intended functions without any failures.

Bulgarian anti-discrimination law prohibits all forms of direct and indirect discrimination, implicitly covering the use of algorithmic technologies and AI by public administration. However, there are no specific legal provisions to ensure that these technologies are not used in a discriminatory manner.

An important, though non-consolidated, governing principle can be found in the repeated pattern of some laws to protect individuals in case of automated data processing. It refers to the legal obligation to ensure human intervention. This can be

[80] Issued by the Minister of Education and Science, Prom. SG. 31/19 April 2022.

traced to several Bulgarian legal acts, not all of them relevant to the activity of the public authorities. In a broader perspective, concerns about human rights and the need for greater awareness of individuals' vulnerability when their personal data are subjected to automated processing have already been raised with the Council of Europe's Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data[81]. The Convention defines "automatic processing" as operations carried out wholly or partly by automated means, including data storage, logical and/or arithmetic operations on data, data alteration, erasure, retrieval, or dissemination – all without human intervention.

The Bulgarian PPDA[82] aligns with Regulation (EU) 2016/679 (GDPR) by requiring personal data controllers to notify data subjects about automated decision-making, including profiling (Article 12 GDPR). It also mandates that they provide information on the logic behind profiling and its intended consequences for individuals (Article 13, paragraph 2, letter f, GDPR) when processing large databases. Furthermore, data controllers must take appropriate measures to safeguard the rights, freedoms, and legitimate interests of data subjects, including the right to human involvement and the ability to express their views and challenge decisions based on the automated processing of personal data (Article 22, paragraph 3, GDPR). Article 52 PPDA prohibits making decisions based solely on automated processing, including profiling, if such a decision causes adverse legal consequences or significantly affects the data subject. Exceptions are allowed when provided for by European Union law or the legislation of the Republic of Bulgaria if there are adequate safeguards for the rights and freedoms of the data subject. At the very least, human intervention must be included in the decision-making process. Automated decision-making should handle personal data in a way that protects the rights, freedoms, and legitimate interests of the data subject. The data subject has the right to receive information about the processing, express their opinion, receive an explanation of the decision, resulting from this processing, and appeal the decision. Profiling that leads to discriminating against individuals based on categories of personal data is expressly prohibited by law. In addition, Article 64 of PPDA

[81] Ratified by Bulgaria on 18 September 2002, in force from 1 January 2003.
[82] Prom. SG. 1/04 January 2002.

mirrors Article 35 of the GDPR. It mandates that where a type of processing, in particular when using new technologies, and considering the nature, scope, context, and purposes of the processing, is likely to pose a high risk to the rights and freedoms of individuals, the controller shall, prior to the processing, assess the impact of the envisaged processing operations on the protection of personal data. This is known as a data protection impact assessment.

Bulgarian consumer protection law also has already adopted this concept, requiring prior consent from the consumer whenever a supplier of financial services uses automatic calling systems without human intervention[83].

Furthermore, under Art. 226a of the Electronic Communications Act, companies providing public electronic communication services must notify the end user in advance that a preliminary risk assessment will be conducted through automated processing. They must also inform users of their rights to request human intervention in the process, express opinions and challenge decisions made by automated means.

In accordance with the Employment Code (Art. 107h, paragraphs 11 and 12), in the cases of telework assignment and reporting through information systems for algorithmic management, the employer is obliged to provide the employee with written information on the type and volume of work-related data to be collected, processed, and stored in it. The employer is further obliged to provide the employee with written information on the decision-making process. Upon the employee's written request, the employer or a designated official reviews the decision made by the algorithmic management system and notifies the employee of the final decision. The concept of algorithm management is relatively new to Bulgarian legislation. It deals with the reasonable limits of the employer's control over the employee's work and the guarantees for human intervention in the decision-making process when it impacts significantly on an employee's rights and interests.

Generally, automated data processing does not release the administrative authority from its obligation in this matter. For instance, the Civil Registration Act[84] provides that the automated processing of an individual's data does not mean that the institutions

[83] See for instance Article 17, paragraph 1, item 1 of the Distance Marketing of Financial Services Act, prom. SG. 105/22 December 2006.
[84] Prom. SG. 67/27 July 1999.

are no longer responsible for preparing and sending the civil registration documents (Article 115, paragraph 4).

The expressions "human interference" or "human intervention" in relation to automation systems used by public administration have not been introduced yet in Bulgarian administrative law. The Administrative Procedure Code[85] lacks general provisions for recognising the results of automated systems used by public administration and does not mandate human intervention when these systems or databases are employed to issue official certificates or make decisions. There is no case law to indicate how the public administration or courts would handle individual requests for human intervention or a review of output processed by automated systems. It should be emphasised that the Bulgarian administrative law lacks general provisions to deal with automated administrative acts and decisions taken by the authorities based solely on automated systems. This creates legal uncertainly about the application of the general principles of the Administrative Procedure Code in case of automated decision-making. A principle of primary importance here is the accessibility, publicity and transparency principle, which commands transparency, authenticity and thoroughness of the information in the administrative proceedings (Art. 12, para. 1). In addition, it is also not clear in these situations how the administrative bodies will perform their obligation to ensure cooperation with, and information for, the persons concerned (Art. 28), to enable them to examine the documents of the administrative dossier and express their opinion on the collected evidence (Art. 34). The boundary between decisions made *de jure* solely by automated systems and decisions made *de facto* by automated systems may become blurred and uncertain.

The lack of legal regulation of automated decision-making by the public authorities, the lack of transparency on the levels of interactions between automated systems and humans in the administrative procedure, and the lack of easily accessible, low-priced, effective redress mechanisms, pose the risk of a "black box" administration committing illegal and arbitrary acts, bluntly demonstrating its predominance and shifting a disproportionate burden on disadvantaged citizens and legal entities. Automated systems rely on data and algorithms. Injustice may result from

[85] Prom. SG. 30/11 April 2006.

wrong or incomplete data as well as from the biased or faulty design of the algorithm. However, injustice may arise from human error in poor and incompetent judgment regarding when and to what extent the government agency should rely on automated systems, and how much human intervention is needed in the given case.

Furthermore, since the use of algorithmic technologies and AI by the police, for example, is treated as classified information or a national security issue, there may reasonably be concerns that no effective protection and remedies may be in place for individuals' privacy, with no procedures ensuring the quality of datasets and no transparency obligations incumbent on the police.

Relevant regulatory bodies, such as the Consumer Protection Commission, the Commission for the Protection of Personal Data, and the Commission for Protection against Discrimination, can be important stakeholders in the process of explaining to citizens how AI is used and how it affects their fundamental rights. For instance, the Commission for the Protection of Personal Data issued a statement informing the users of the social networks Facebook and Instagram that Meta Platforms Ireland Limited (Meta) plans to start using their posts, photos, descriptions (including profile photos of non-public profiles), and comments to develop, train and improve Meta's artificial intelligence (AI) service. The Commission also provided guidance and instructions on how to object if users do not want their posts, images, and comments to be used for this purpose.

Bulgarian law does not recognise algorithmic codes as administrative documents. Additionally, the survey conducted by the authors by means of the Access to Public Information Act revealed that almost no public bodies or administrations consider algorithmic codes to be administrative documents. An interesting view was expressed by Sofia Municipality in its reply to this question. They defined the algorithmic code as a text, describing the rules of operation of an algorithm. Based on this definition, the reply assumed that the code could be treated as a document, which can be read, reviewed, changed, copied and distributed. The reply also made clear that the algorithmic code as a document is not sufficient to fully understand the algorithm.

6. Bringing Complaints against the Automated State

So far, the most conspicuous litigation against the reliance by the public authorities on algorithms concerns the complaints brought by drivers against the Ministry of the Interior to challenge electronic traffic tickets under the Administrative Offences and Administrative Penalties Act.[86] These tickets are generated by automated systems, such as speed cameras or other traffic enforcement technologies, which detect traffic violations and issue penalties automatically, without human intervention at the time of the offence or at the time the penalty document is drafted. In these cases, the offence is detected and recorded by an automated technical device or system, which then issues the electronic penalty without involving a traffic control authority (Article 189 and § 1, item 63 of the Road Traffic Act[87]).

Under the Road Traffic Act, an electronic ticket serves as a means of imposing an administrative penalty on individuals who have violated traffic rules. This type of ticket is not applicable for offences that entail a driving ban or deduction of control points. The law expressly specifies that the electronic ticket is issued without the presence of either the control authority or the offender. This streamlined process deviates from the general administrative penalty procedures, which typically involve an offence detection report drawn up in the presence of both the offender and the control authority, followed by a separate act which imposes the administrative penalty. The Road Traffic Act allows for a simplified procedure, where a single document – the electronic ticket – functionally replaces the two documents normally required for imposing an administrative penalty.

Case law classifies electronic penalty tickets entirely as products of AI. The process is described as a technology, which captures the offence and transmits it electronically to another system, which then issues the electronic ticket. Relevant data is drawn from the centralised Road Traffic Control system. Both the detection of the offence and the issuance of the penalty act are fully automated, occurring without the involvement of the control authority.

The electronic penalty ticket is considered an electronic statement, produced by a machine and technical devices rather

[86] Prom. SG. 92/28 November 1969.
[87] Prom. SG. 20/5 March 1999.

than by a legal entity. For the first time, Bulgarian legislation grants technical devices the authority to perform functions typically associated with an administrative sanctioning authority[88].

Electronic penalty tickets are often challenged in court for the lack of a document's essential elements, namely the signature of a control authority and an issue date. Tickets can be challenged before the district general court where the road offence took place. This first-instance decision can be further appealed before the respective administrative court.

Bulgarian case law on electronic tickets indicates that while the law treats the electronic ticket as both the act reporting the offence and the act imposing the penalty in terms of legal effect, it does not apply the same requirements for form, content, details, and issuance procedures as those detailed in the Administrative Offences and Administrative Penalties Act. Pursuant to the Traffic Road Act, the electronic ticket must include information about the territorial structure of the Ministry of the Interior where the violation was detected, the location, date, exact time of the offence, vehicle registration number, vehicle owner, offence description, relevant legal provisions, the amount of the fine, the payment period, and the bank account for voluntary payment. Those exhaustively listed particulars of the electronic ticket do not include the signature of a control body or the date of issuance. Therefore, courts do not consider the absence of these items as a material procedural irregularity.

The law explicitly states that photographs, video recordings and printouts taken by technical means or recording of the date, the exact time of the offence, and the vehicle registration number are material evidence in administrative proceedings. This provision ensures a high degree of confidence and security in offence detection.

Another aspect of the litigation regarding electronic tickets concerns their applicability based on whether the offence was detected and recorded by a stationary or mobile technical device[89].

The electronic penalty ticket is legally defined as an electronic statement, recorded on paper, magnetic or other medium, created by an administrative information system on the basis of data received and processed by automated technical

[88] Decision No 1147 of 27 July 2023 of Varna District Court case No 2214/2023.
[89] Interpretative decision No. 1/26 February 2014 of the Supreme Administrative Court, interpretative case No. 1/2013.

devices. The Supreme Administrative Court describes the electronic ticket as an act that encompasses both offence detection and sanction functions. This significantly limits the ability of either the vehicle owner, or the designated offender, to contest the findings at the moment the offence is detected and recorded.

The question the Supreme Administrative Court had to answer was in which cases the simplified short-track procedure applies depending on whether the offence is detected by "stationary" or a "mobile technical device". A stationary technical device is one that is pre-positioned and permanently fixed on the road, whereas mobile technical devices are those attached to the vehicle of the traffic control authorities. The court returned a decision that the simplified procedure applies only when the road offence is detected and recorded by a stationary automated technical device operating in an automatic mode without the need for control authority intervention[90]. In cases where mobile technical devices, operated directly by a control authority, the electronic ticket procedure is not applicable. Instead, the general procedure for drawing up an administrative offence report and issuing a penalty decision must be followed. It is important to make clear that legislative changes were made after the decision of the Supreme Administrative Court and electronic penalty tickets can now be issued for road traffic offences detected using mobile cameras, but the law[91] allows this restrictively with many additional requirements imposed.

An interesting subset of cases involves references to AI, shedding light on how courts perceive AI technology. These cases pertain to legal counsel remuneration fees in instances where the case is straightforward in terms of facts and law[92]. When determining the fee amount, courts point out that the statement of claim was templated, standardised and repeatedly used by the legal counsel, largely consisting of copy-paste citations of laws, and lacking in innovation or creativity – something that could be

[90] Id.

[91] Regulation No. 8121z-532 of May 12, 2015 on the conditions and procedure for the use of automated technical means and systems for control of road traffic rules (Prom. SG. 36/19 May 2015).

[92] Order of Sofia Regional Court, dated 15 October 2023, in private civil case No. 53612/2023; Decision No. 4238 of Sofia Regional Court, dated 10 March 2024, in civil case No 23961/2023.

produced by artificial intelligence and automatically generated algorithms.

Apart from these examples, there is still no caselaw in Bulgaria relating to proceedings brought by personal data subjects contesting decisions based solely on automated processing that significantly affect their rights. This may be related to the fact that there is still little awareness in Bulgaria about the need to develop transparency mechanisms and to make easily accessible, inexpensive and efficient remedies available to make good the negative effects of automated systems and/or AI.

7. Scholarly Debates

Bulgarian administrative law scholarship lags behind in contemporary academic debate on the digital state and still has not approached the legal treatment of automated decision-making by the public administration. Bulgarian legal doctrine has barely touched upon the issues of automated algorithms and AI. There are only a few articles introducing the basic concepts of AI-driven types of technology, sketching out the issues to be discussed mainly from the perspective of employment law and intellectual property law[93].

There is no debate whatsoever in the Bulgarian legal scholarship on the liability for harm resulting from the use of AI or algorithmic automated technology, let alone its use by the public authorities. The question whether the regime of fault-based or strict liability is applicable in such cases would probably be answered in favour of the latter. Certain features in the currently ongoing fourth industrial revolution largely resemble the period of the first one and recall the reasons for the expansion of strict liability in Europe – the unprecedented development of technology that steadily outpaces the means of safety, the almost unbearable burden for proving fault thus leaving victims uncompensated, and situations of loss in the absence of any fault, risk related arguments. The realm of strict liability in Bulgarian law encompasses several regimes.

[93] I. Ilieva, *The rule of law and artificial intelligence*, 3 Izvestiya, Journal of the Economy University of Varna 210–226 (2020), at https://journal.ue-varna.bg/uploads/20210218113923_1798896116602e51eb3ce0e.pdf, accessed 31 July 2024; V. Edjov, *Artificial intelligence as a challenge to the law* (15 May 2023), at https://news.lex.bg/Изкуственият-интелект-като-предизвикателство-пред-правото/, accessed 31 July 2024; T. Tomov, *Artificial intelligence and the implications for the labour market*, 4 Journal of Labour and Law (2024).

Product liability may be considered suitable for harm caused by AI technology but has the drawback of covering only cases of death, personal injury, and property damages whereas AI triggered harm may possibly result in invasion of privacy, discrimination, infringement of dignity, and other fundamental rights. Perhaps an AI-specific difficulty would be to establish the source of the harm as AI devices become more and more interconnected and autonomous in exchanging data and learning. Still another problem may be to identify whether the "defect" comes from the assignment, design, or development of the technology. The usual hurdles with causation and vicarious liability for harm caused by independent contractors should also be analysed for the specific case of AI technology. The State and Municipal Liability for Damage Act[94] also provides a state strict liability regime and the municipalities for harm flowing from unlawful acts, actions or inactions of their bodies and officials in the course of or in connection with the performance of administrative activities. Unfortunately, case law shows some uncertainty and confusion as to the meaning of "administrative activity", which some courts interpret broadly to encompass any activity of public authorities, while others limit it strictly to public governance activities.

8. Conclusions

The above survey showed that, overall, the regulation of algorithmic technologies and AI in Bulgaria is still in its infancy. There have been no discussions or implementations of restrictions on the use of specific technologies within particular sectors. Additionally, Bulgarian society appears to be quite distant from comprehending the risks and threats associated with the unchecked use of technologies and AI in social life.

Most of the legal requirements that apply to reliance on algorithmic automation/AI by public authorities stem from fundamental principles and old-established norms, such as the prohibition of discrimination, the protection of privacy, and the safeguarding of personal data. The new technology-focused regulations in Bulgarian law primarily aim to implement EU legislation rather than creating a comprehensive legal framework

[94] Prom. SG 60/05 August 1988.

that protects individual rights and enhances the accountability of public authorities.

Yet, this does not mean that there are no uses of algorithmic technologies and AI by the Bulgarian public administration.

Bulgaria has to adopt legislation setting the ground for an open, transparent, inclusive and accountable public administration, empowered by modern automated technology to reach tailor-made, fair and just decisions for citizens and legal entities.

Based on the answers received by the authors from the interviews with numerous Bulgarian government agencies and on the overall analysis herein carried out, it can be assumed that the sectors probably most affected by algorithmisation are tax authorities, police offices, security services, traffic management, and digital identity.

THE APPLICATION OF ALGORITHMS AND ARTIFICIAL INTELLIGENCE IN CROATIAN PUBLIC ADMINISTRATION

Dario Đerđa and Dana Dobrić Jambrović***

Abstract

The aim of this paper is to analyse the application of algorithms and artificial intelligence (AI) in the daily work of public administration in Croatia. The authors examine to what extent Croatian public administration has been computerised and digitalised and how long these processes have existed in Croatia. The main research question is: in which areas and for what purposes are the management of public affairs and the provision of public services based on the use of algorithms and AI. First, the strategic framework of the digitalisation of public administration is discussed in order to show the goals that the central government is trying to achieve. Then, the use of algorithms and AI in keeping official public administration records ('official records') and issuing certificates is analysed. In addition, the applicability of algorithms and AI in the adjudication of administrative matters is assessed. Lastly, the use of algorithms and AI in the management of administrative court proceedings is also considered. The research was conducted using the legal analysis method, teleological and descriptive methods, and an analysis of the web portals and official websites of administrative bodies in Croatia.

TABLE OF CONTENTS

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1. Introduction

Over the last three decades, information and communication technology (ICT) tools have significantly changed traditional social relationships and the way society and the economy function. They have accelerated the flow of communication, made information more accessible, improved existing products and services and created some new ones[1]. The tools of ICT have significantly influenced the attitude of public administration toward citizens and various social groups, especially the business community[2]. These tools have led to a faster and now unstoppable transition from the traditional handling of administrative tasks to the so-called e-administration as a way of handling administrative tasks in the future. E-administration encompasses the use of ICT in daily public administration with the aim of improving its efficiency and cost-effectiveness and increasing the quality of work. At the same time, it contributes to the transparency of the work of the public authorities as one of the fundamental values to be achieved in modern society. As part of the concept of good governance, e-administration implies not only the use of ICT tools in the daily work of public servants and their e-communication with citizens and other subjects, but also brings a qualitative change in public administration oriented toward its users. The quality of management in each country, and thus the success of public administration in meeting the challenges of current economic and social trends, depends to a large extent on the actual impact of the use of the modern technological potential. Therefore, ICT tools play an important role not only in the daily work of citizens and

[1] J. Müller, *Upravljanje informacijskom tehnologijom u suvremenim tvrtkama te hrvatska poslovna praksa korištenja informacijskih tehnologija*, 52: 5-6 Ekonomski pregled 587 (2001).
[2] L. Budin, *O hrvatskom nazivlju u području računarstva i informacijske tehnologije*, 1:1 J. Comp. & Inf. Tech. 75 (1993).

entrepreneurs but also in the work of the public authorities in Croatia today[3].

The use of ICT tools in the public administration follows the trends of global technological challenges, computerisation, digitalisation, and the application of AI in work processes. AI, as a set of rapidly developing technologies, can bring a number of benefits to a variety of economic and social activities[4]. As AI improves forecasting, optimises workflows, helps allocate resources to users, and personalises the services offered, its use can contribute significantly to achieving the results that benefit society and provide the economy with important competitive advantages. The use of AI has proven to be particularly useful in the areas of finance, home affairs, transportation, agriculture, public health protection, protection of nature and environment, etc. The application of AI is very broad and diverse and includes numerous work processes such as machine translation, the creation of expert systems and simulations, the use of robotics (kinesthetic AI), text creation and 'chatbots', the creation of images, pattern or object recognition, spatial analysis, data search, and automatic programming, etc[5].

The development of AI is based on so-called machine learning, that is, on neural networks that enable these systems to analyse a large amount of information, communicate with humans via natural language, but also with inanimate systems, learn based on experience, draw conclusions, behave adaptively, plan in a complex way, etc. The functioning of AI is based on algorithmic technologies increasingly being used in business, but also in public administration[6]. This is because the algorithm can be expressed in

[3] On this issue, see N. Vrček & A. Musa, *E-uprava u Hrvatskoj: Izazovi transformacija uprave u digitalnom društvu* (2016).

[4] Artificial intelligence is the ability of computers to perform operations equivalent to human learning and decision-making. See *Veliki rječnik standardnog hrvatskog jezika* (2015) 433.

[5] For comment, see *Hrvatska enciklopedija – mrežno izdanje* (2013-2024), available at https://enciklopedija.hr/clanak/umjetna-inteligencija, last accessed 25 July 2024.

[6] An algorithm represents a set of symbols and a general procedure for systematically solving individual tasks from a certain class of mathematical problems, such as Euclid's algorithm for determining the greatest common measure of two natural numbers, Eratosthenes' sieve for determining prime numbers or Gauss' algorithm for solving systems of linear equations. Initially, the name 'algorithm' referred to the Arabic system of decimal notation, which was introduced in Europe in the ninth century by al-Khwarizmi, from whose

numbers and words, which makes it very suitable for performing public administration tasks with the help of ICT[7]. However, unlike the ability of humans to perform various functions simultaneously, AI systems are usually specialised in performing a narrower range of specific processes, which should be taken into account when choosing this working method.

The aim of this paper is to analyse the application of algorithms and AI in the daily work of public administration in Croatia. The authors examine to what extent Croatian public administration has been computerised and digitalised today and how long these processes have existed in Croatia. The main research question is: in which areas and for what purposes are the management of public affairs and the provision of public services based on the use of algorithms and AI. First, the strategic framework of the digitalisation of public administration is discussed in order to show the goals that the central government is trying to achieve. Then, the use of algorithms and AI in the management of official records and issuing certificates is analysed. In addition, the applicability of algorithms and AI in the adjudication of administrative matters is assessed. Lastly, the use of algorithms and AI in the management of administrative court proceedings is also considered. The research was conducted using the legal analysis method, teleological and descriptive methods, and an analysis of the web portals and official websites of administrative bodies in Croatia.

2. The Strategic Framework for the Informatisation and Digitalisation of Public Administration

A systematic approach to the introduction of ICT tools in Croatian public administration began in 2002 with the adoption of the Strategy for Information and Communication Technology – Croatia in the 21st Century. With this Strategy, the Government of

name it was derived. It was then applied to counting with Arabic numerals and to arithmetic skills. Generally speaking, an algorithm is any general solution to an equation to search for specific solutions. For example, the formula $P=a^2$ is an algorithm for calculating the area of a square. The term 'algorithm' is broader than the terms 'formula', 'equation,' 'criterion', and others, because it includes them all. See *Hrvatska enciklopedija, sv. 1* (1999) 151; *Hrvatski opći leksikon* (1996) 19; *Rječnik hrvatskog jezika* (2000) 16.

[7] See J. Etscheid, *Artificial Intelligence in Public Administration*, in I. Lindgren et alii (eds), *Electronic Government. EGOV 2019. Lecture Notes in Computer Science* (2019).

the Republic of Croatia defined the role of ICT in the future functioning of public administration and confirmed its orientation towards the development of the information society[8]. The importance of computerisation in the work of public administration increased over time, so that five years later the E-Croatia 2007 Programme was adopted, which aimed to create a system that would enable citizens and entrepreneurs to communicate with the state administration and use various services via the Internet[9]. The Central State Office for E-Croatia was established as the central body of the state administration responsible for designing, monitoring, and evaluating public policies to develop the information society. By 2008, a number of new e-services of the state administration were developed and made available to users. Furthermore, the Central State Portal was introduced as a single point of access to public administration information, and significant investments were made in the computerisation of administrative matters and the digitalisation of official registers. The creation of many applications that should help public administrations in their work is usually entrusted to actors outside the public sector, who have taken on the obligation to maintain them, ensure their high-quality functioning, as well as to preserve and protect the data stored. At the same time, efforts were made to train public servants through various state-level training courses focused on the use of ICT resources.

The systematic approach to the development and implementation of ICT tools in the work of public administration continued with the adoption of the Strategy for the Reform of Public Administration for the period 2008-2011[10]. This Strategy aimed to promote the use of these tools in order to improve the efficiency and cost-effectiveness of state administration, increase the quality of public services provided to individuals, and make state administration bodies more accessible to citizens and entrepreneurs. The Strategy was followed by the Strategy for the

[8] Government of the Republic of Croatia, *Information and Communication Technology Strategy – Croatia in the 21st Century of 2002* (2002).

[9] Program e-Hrvatska 2007, at https://rdd.gov.hr/UserDocsImages/MURH_migracija%20s%20weba/Arhiva%20projekata/Operativni_plan_provedbe_Programa_e-Hrvatska_2007_za_2006.pdf, accessed 25 July 2024.

[10] *Strategija reforme državne uprave za razdoblje 2008-2011*, 8:2 Hrvatska javna uprava 315–342 (2008).

Development of Electronic Administration in the Republic of Croatia for the period from 2009 to 2012, which defined the framework and objectives of existing and new e-administration activities, improved the communication networks of state administration bodies, established a system for managing public data and documents, and defined services to be implemented in the form of e-administration[11].

In addition, the importance of providing fast and reliable public services was confirmed by the Croatian Parliament in the Public Administration Development Strategy for the period from 2015 to 2020[12]. This was followed by the adoption of the E-Croatia 2020 Strategy, whose mission is to use ICT to improve the quality of life of citizens, increase the competitiveness of the economy, and provide society with high-quality electronic public services[13]. In 2021, the Croatian Parliament adopted the National Development Strategy of the Republic of Croatia until 2030, which emphasised that one of the strategic goals is the availability and efficiency of digital administration. This is to be achieved by increasing the number of automated and computerised processes, increasing the availability of official records for public administration bodies, increasing the availability of digital public services for citizens and entrepreneurs, and taking into account the protection of personal data[14]. This Strategy aims to improve the legal framework that regulates the impact of AI and 'big data' analysis on fundamental human rights and ensures the protection of citizens and entrepreneurs from all forms of discrimination.

The Strategy for Digital Croatia until 2032 is the latest act supporting the aforementioned national strategies[15]. This Strategy envisages the application of advanced technologies such as 5G and 6G, AI, machine learning, cloud computing, big data, and blockchain technology in the public and private sectors over the

[11] *Strategy for the Development of Electronic Administration in the Republic of Croatia for the period from 2009 to 2012*, at https://rdd.gov.hr/UserDocsImages/MURH_migracija%20s%20weba/Arhiva%20projekata/strategija_e_Uprave_HRV_final.pdf, accessed 25 July 2024.

[12] Public Administration Development Strategy for the period from 2015 to 2020 of 2015.

[13] *E-Croatia 2020 strategy*, at https://www.nipp.hr/UserDocsImages/dokumenti/dok-nippa/Strategija_e-Hrvatska_2020_OCR.pdf?vel=1823370, accessed 27 July 2024.

[14] National Development Strategy of the Republic of Croatia until 2030 of 2021.

[15] Strategy for Digital Croatia until 2032 of 2023.

next decade. It is also open to the implementation of disruptive technologies that may emerge in the future and whose application should enable better processing and use of data and thus contribute to the efficiency of the work of public administration, the creation of public policies, the personalisation of public services, the reduction of administrative burdens, more efficient communication between public administration and citizens, and greater cooperation between the public and private sectors.

The above-mentioned strategic documents and the activities carried out on their basis demonstrate Croatia's long-term commitment to the computerisation and digitalisation of public administration. It started with the interconnection of existing data and official records, which resulted in new, complex results that can be very useful for citizens and entrepreneurs, but also for public administration. One example is the Open Data Portal, a system that represents a data hub and serves to collect, categorise, and disseminate open public administration data. This data is produced by public administration and consists, for example, of geolocation data, traffic data, meteorological data, environmental data, etc., whose use for commercial and/or non-commercial purposes can create added value or economic benefits. Disseminating public and open data through a single centralised entity allows the creation of innovative non-commercial and commercial applications at the service of entrepreneurship and even citizens' daily lives, thereby bolstering economic and social activities. It is important to emphasise that the functionalities of the aforementioned applications are largely based on algorithmic technology and the use of AI in the functioning of public administration.

On the basis of the aforementioned strategic documents and with the aim of computerising and digitalising public administration, the HITRONet system was also established. This system is a communication network designed to connect various public administration bodies through a common computer and communication infrastructure. Through this system, state information resources are integrated via secure private broadband infrastructure that connects central and remote public administration locations to a common data network. This greatly facilitates the work of the state administration, local and regional self-government, and other legal entities that have public powers and enables easy exchange of data between them. This system provides secure and strictly controlled access to all public

administration facilities and the establishment of standard network services. In addition, this system also implements specialised services necessary for the daily work of the public administration, such as the Treasury system, the OIB system, e-File (Cro. *e-Spis*), etc., which significantly accelerate and facilitate the exchange of data from official records[16]. The interoperability of the public administration system has recently been further strengthened by the creation of the Government Service Bus, a database used by public administration bodies to comply with the legal obligation to obtain data *ex officio* from public registers, without requesting the same data from the parties in the proceedings they are conducting, which is particularly important for the adjudication of administrative matters[17].

The organisation and introduction of such systems in Croatia have created a qualitative basis for the introduction of algorithmic and other digital technologies in the work of public administration related to keeping official records and issuing certificates, resolving administrative matters in proceedings initiated *ex officio*, and managing cases in court proceedings. However, despite the developed use of ICT and AI tools in public administration, there is no general legal regulation in Croatia that would regulate the use of such technologies, but their use should be in compliance with other laws and regulations that govern the actions of the public authorities.

3. Issuing Certificates and Providing Public Services Using Algorithms and Artificial Intelligence

In the last two decades, Croatia has made significant progress in the use of ICT resources and the computerisation and digitalisation of public administration. These developments first manifested in the digitalisation of official records. Although the digitalisation of some of these records began as early as the 1980s,

[16] Since June 2009, HITRONet has been connected to the sTESTA network (secured Trans European Services for Telematics between Administrations), a special European Union network designed to connect public administration bodies at the European Union level and offer trans-European services between the public administrations of EU member states.

[17] Government Service Bus, available at https://rdd.gov.hr/istaknute-teme/interoperabilnost-sustava-javne-uprave-drzavna-sabirnica-gsb/1873?lang=hr, accessed 3 July 2024.

it was fully completed about 15 years ago. It was precisely the systematic digitalisation of official records that was the basic prerequisite for offering a number of services to citizens and entrepreneurs in electronic form.

An important step forward in the use of ICT tools in the work of public administration was taken in 2014 when the State Information Infrastructure Act was adopted. The Act defines the rights, duties, and responsibilities of the competent public administration bodies in connection with the establishment, development, and management of the state information infrastructure system, the system of official records, and the secure exchange of data between public administration bodies. The state information infrastructure system ensures the interoperability of information systems and official records of all public administration bodies and enables them to interact directly with citizens or other users[18]. A large amount of data contained in official records is made available to all public administration bodies as well as citizens and other users in accordance with the rules on the protection of personal data, confidentiality of data, information security rules, and rules on the right of access to information[19].

Although the Act on the State Administration System, as a fundamental law that regulates the organisation and functioning of state administration, does not prescribe the mandatory keeping of official records and the issuance of certificates in e-form, today, these records are fully digitalised, and many certificates are issued electronically. These official records consist of structured, organised, interconnected, and harmonised data on the subject of registration and data related to the subject of registration. They are organised and maintained on the basis of a law, more rarely based on an international agreement, and are used to record and store data in the context of fulfilling prescribed public administration tasks. The data contained in these registers, as well as all elements necessary for their interpretation, are the property of the Republic

[18] Public administrative bodies in Croatia are state administrative bodies and other organs of the state, local and regional self-government entities, and legal persons exercising public authority.

[19] The state information infrastructure is a system consisting of a common state basis for secure data exchange and tools for interoperability, such as metaregisters, technical standards, classifications, public registers, the e-Citizens system, and the state information infrastructure networks HITRONet and CARNet. State Information Infrastructure Act of 2014, art 2 (3), art 4 (1), art 5 (1).

of Croatia[20]. For example, the Register of Voters, the Register of Political Parties, the Register of Associations and the Register of Foreign Associations, the Register of Religious Communities, the Register of Councils, the Coordination of Councils and Representatives of National Minorities, the Register of Foundations, the Register of Foreign Foundations, the Register of Craftsmen and the Register of Residence and Domicile of Citizens, the registers of Croatian citizens, owners of vehicles, ships and airplanes, various tax registers, the registers of pension and disability beneficiaries, health insurers, and others are kept in digital form.

The State Administration System Act places particular emphasis on the fact that the official business of public administration is carried out exclusively in e-form[21]. To this end, a new Regulation on Office Correspondence was adopted in Croatia in 2021, to the effect that all office correspondence is to be carried out exclusively in e-form, thus significantly facilitating data exchange between public administration bodies[22]. This Regulation introduced a functional obligation to connect and exchange data from a given public administration office with other information systems maintained in specific administrative areas, as well as the obligation to connect and exchange data with the reporting system for adjudicating administrative matters.

Digitalised official records are not only of immense importance for the exchange of data required for administrative decisions and other administrative procedures; they are also necessary for issuing certificates to individuals concerning the data they contain, on the basis of which citizens and entrepreneurs exercise numerous rights. Today, the majority of certificates issued in Croatia are in electronic form, created through the use of algorithms and AI. This is the case, for example, with certificates of domicile or residence, vehicle ownership, building energy performance, birth and marriage certificates, etc. These certificates are usually issued on the same day they are requested, thanks to the application of algorithms and AI in the public administration. Through the functions of the state information infrastructure, a party can submit a digitally written request for a specific certificate, which is then generated on the basis of the data contained in the

[20] State Information Infrastructure Act of 2014, art 2 (10), art 3, art 19.
[21] State Administration System Act of 2019, amended 2023, art 16 (1).
[22] Regulation on Office Correspondence of 2021.

official records and delivered to the party in electronic format, electronically certified with a barcode that enables verification of its authenticity. In this way, the objectives of the 2010 General Administrative Procedure Act, as a fundamental law regulating the functioning of public administration as a whole, were achieved[23].

In order to facilitate and improve communication between both citizens and entrepreneurs and the public administration, the Central State Portal was established – a virtual centre where information on public services and other information and documents related to the work of public institutions is collected in one place in easily accessible formats. This portal has two basic functions. On the one hand, it serves as a platform for public administrations to publish information on public services and information and documents related to the implementation of measures in their area of responsibility. On the other hand, it enables them to communicate with citizens and other users by submitting information in electronic format via the personal user mailbox system[24]. Thanks to the Central State Portal, citizens and entrepreneurs can search online for information related to the exercise of rights and the protection of their interests, the use of public services, and the monitoring of various political activities.

A special e-Citizens system has been integrated into this Portal, allowing citizens to access electronic public administration services through a unique electronic identity used for authentication. Using this System, citizens can request electronic extracts from birth, marriage, or civil partnership registers, electronic records of domicile, residence, or vehicle ownership, extracts from the pension system, criminal record certificates, student status certificates and many other documents. At the same time, using algorithms and AI, the system allows Croatian citizens to electronically register their place of domicile or residence, change their place of voting in Croatia and abroad, and register a marriage or a newborn child, as well as start a business, all without having to go to the public administration offices. Through this system, taxpayers can view their tax and accounting cards, and parents can also see their children's school marks.

[23] In 2010, the General Administrative Procedure Act prescribed the possibility of issuing certificates on facts about which public administrative bodies keep official records (art 159 (4)).

[24] Act on State Information Infrastructure of 2014, art 2 (16-17), art 7 (2, 4).

To keep citizens informed regarding their personal status, this system sends them personalised messages in electronic format relating to the public services they use and the procedures in which they participate. For example, algorithms are used to notify members of the public about the expiry of the registration of a vehicle, a firearms licence, or a licence to carry out a specific activity, as well as a notification to collect administrative and judicial decisions, scheduled specialist medical treatment, etc. The system sends personal messages to citizens and entrepreneurs informing them of what they need to do to comply with the regarding their personal status in some specific administrative areas[25]. Today, more than 100 e-services are available in the e-Citizens system, and numerous messages and notifications about the personal status of citizens are delivered through this system. It allows citizens easy and rapid communication with the public authorities and improves the transparency of the public sector in providing public services. In addition to the e-Citizens system, almost 600 other electronic services from various ministries, state administrative organisations, central agencies, institutes, chambers, and local and regional self-government units are available to the public in Croatia today[26].

4. Adjudication in Administrative Matters Using Algorithms and Artificial Intelligence

One of the fundamental tasks of public administration is to adjudicate in administrative matters. This task is particularly sensitive because, with such decisions, public administration bodies assign numerous rights to individuals or impose obligations on them. Since decision-making by algorithms and AI uses a series of well-defined, computer-executable actions that are specific to the execution of a series of similar processes, the calculation of values and the expression of data, the adjudication process in administrative matters may seem very suitable for the use of this

[25] For example, citizens can receive a notification from the Ministry of the Interior that their ID card or passport is about to expire together with a request to renew it. The e-Citizens system has been operational since June 10, 2014.

[26] These are e-applications, e-forms, and services associated with web stores, interactive maps, and other e-services in Croatia, available at the Central State Office for the Development of the Digital Society – E-services in the Republic of Croatia, at https://rdd.gov.hr, last accessed 20 July 2024.

modern technology[27]. The adjudication process in an administrative matter is carried out using the so-called legal syllogism, that is, rules based on the principles of logical reasoning. It draws a conclusion from certain premises, which constitutes the judgment of an administrative decision. Every legal decision, including an administrative decision, is made by applying the general rule of law to the conclusion drawn from the facts of the case. It derives the meaning of the general rule of law from the entire legal system, and the conclusion about the facts by applying the rules of logical syllogism to the facts found in the evidentiary proceedings. The application of legal rules in many administrative matters is not demanding, as these rules are often clearly and precisely laid down in the law itself. The data needed to draw a conclusion about the facts are often contained in the official records. The prerequisites for such decisions using algorithms and AI are therefore in place.

For example, in Croatia, tax on holiday homes is paid annually as a public benefit by the owners of residential buildings that are used occasionally or seasonally. It is calculated on the basis of the number of square metres of the usable area of such a building. The obligation to pay tax on a holiday home is therefore calculated by multiplying the usable area of the house or apartment that is used occasionally or seasonally by the fee coefficient established by the representative body of the local self-government unit[28]. This means that the calculation of this tax requires precise data on the residential buildings in the territory of the local self-government unit, their usable area, the owners of the buildings, and the intensity of their use, while the method of calculating this tax is specified in

[27] Algorithms are always safe and they are most commonly used in practice for calculations, data processing, automated thinking, and solving typical tasks. An algorithm can be expressed in a limited space and time and in a well-defined formal language for the calculation of equivalent operations. Starting from an initial state or input, instructions describe actions that, when executed, go through a limited number of well-defined successive 'steps' and finally produce an 'output'. All of this corresponds to the process of making administrative decisions in accordance with categorical legal norms. So-called randomised algorithms, which use a random input of data from corresponding databases, are not suitable for use in the legal system precisely because of the logic of how the legal system works. On this issue, see F. Staničić & M. Jurić, *Pravni okvir za implementaciju informacijsko-komunikacijskih tehnologija u hrvatsko upravno postupovno parvo*, 65:5 Zbornik Pravnog fakulteta u Zagrebu 635–663 (2015).

[28] Local Taxes Act of 2016, amended 2017, 2022, 2023, arts 25–28.

the law. The utility fee – a monetary public benefit paid by owners or users of residential, business, and garage spaces, the construction land used for business activities, and undeveloped construction land – is calculated in a similar way. This fee is calculated by multiplying the number of square metres of the property, the coefficient of the purpose of use of the property and the point value of the utility fee, which is determined by the local self-government unit[29]. Therefore, information on residential buildings, business buildings, garages, construction and undeveloped construction land, their area and the zone in which they are located, as well as on the owners or users of these buildings and land, is required for the collection of the utility fee. In Croatia, income tax is calculated using the same method. This tax must be paid by a citizen who earns income from self-employment, property and property rights, capital, and other sources in a calendar year. The total amount of income is reduced by the pension insurance contributions and the so-called personal deductions, which are accepted for various reasons. The remaining amount of income is taxed at a lower rate up to a certain amount and at a higher rate beyond that[30]. To calculate the amount of a citizen's annual income tax liability, it is necessary to determine the amount of their total income in the calendar year, the amount of pension insurance contributions they have paid, and the amount of their personal deductions. The method for calculating this tax is prescribed by law and other regulations.

The rules for calculating all these benefits are prescribed by law so that, if the specified data are known, by including them in the corresponding formula, an adjudication in an administrative matter is made in an automated process that takes place using an algorithm and AI. Therefore, decisions in these administrative matters, as well as numerous others, have been made by these very tools for decades. The use of algorithms and AI in adjudication in administrative matters is particularly common in matters where individuals are asked to pay annual or periodic taxes, fees and other public benefits. The use of algorithms and AI in adjudicating administrative matters is far more common than their use in other legal, especially judicial, proceedings. The reason for this is certainly the precisely defined rules for adjudication in

[29] Utility Management Act of 2018, amended 2018 and 2020, arts 91–102.
[30] Income Tax Act of 2016, amended 2018, 2019, 2020, 2022, 2023, art 2 (1), art 5 (1), art 7 (1), arts 13–19.

administrative matters, formulated in categorical regulations, which only allow for one legal outcome under the given circumstances[31]. On the other hand, as already mentioned, digitalised official records containing various data relevant to such decisions contribute to this[32].

Despite these assumptions, the General Administrative Procedure Act, which is applied in the adjudication of all administrative matters, imposes significant restrictions on the use of algorithmic technology and AI in the adjudication process by prescribing rules for the conduct of administrative proceedings. This law protects individuals from unlawful actions by the public authorities, and especially from unlawful decisions that could be taken arbitrarily and without following the procedure. According to this law, public authorities must act in accordance with nine principles when resolving administrative matters: lawfulness, proportion in protection of rights of parties and public interest, assistance to a party, establishment of material truth, independence and discretion in the evaluation of evidence, efficiency and cost-efficiency, access to data and data protection, legal remedy, and the principle of protection of acquired rights of parties[33]. The aforementioned principle of establishment of material truth obliges the public administration to determine the true state of facts in the administrative procedure, that is, to establish all the facts and circumstances that are important for the lawful adjudication of the administrative matter. In other words, in order to find the only lawful solution, the facts to which the general rule is applied in the administrative matter have to be established accurately and truthfully[34]. An error in establishing the facts of the case is the

[31] A categorical legal provision is structured like this: "In the event of A, one should do B". In contrast to the categorical, a disjunctive legal provision has the structure: "In the event of A, one can do B, C, or D".

[32] Official records are those created on the basis of regulations, that is, a general legal act of the state or local or regional self-government unit, and which public administration bodies are obliged to keep. According to the legal presumption of truth, the facts registered in the official records do not have to be proven and are considered true until proven otherwise. See General Administrative Procedure Act of 2009, amended 2021, art 58 (2), art 159 (3).

[33] General Administrative Procedure Act of 2009, amended 2021, arts 5–13.

[34] The truth in a judicial proceeding represents correspondence between the subjective knowledge of the person conducting the proceeding with objective reality, and the material truth as the highest degree of certainty that an entity can achieve in a judicial proceeding. See B. Ljubanović, *Načelo traženja materijalne istine i upravni postupak*, 19:4 Hrvatska komparativna i javna uprava 665 (2019).

reason for the unlawfulness of the administrative decision, which should then be annulled by ordinary or extraordinary legal remedies or in administrative litigation. The party's right to be heard, which obliges the administrative body conducting the administrative procedure to give them the opportunity to express their attitude toward all facts and legal issues important for the adjudication of the administrative matter, certainly also contributes to the importance of the correct and truthful finding of the facts in the administrative procedure. Without the party's prior statement, the administrative proceedings can only be conducted if the party's request is accepted or if the decision in the proceedings has no negative impact on the party's legal interests, or if it is required by law[35]. It is clear from the above that, in Croatian administrative procedures, it is the task of the public administrative body to find the material truth, and to cooperate closely with the party throughout the procedure. These legal provisions will in many cases prevent the use of algorithms and AI in the adjudication of administrative matters.

The General Administrative Procedure Act, with its provisions on the manner of initiating administrative procedures and the provisions on the manner of their implementation, largely determines in which administrative matters it is possible to make decisions using algorithms and AI, and in which it is not. Administrative proceedings are always initiated by a public administrative body, either at the request of a party or *ex officio*[36]. The decision in administrative procedure can be made through direct adjudication or an investigatory procedure. The direct adjudication of an administrative matter is exceptionally permitted in the cases prescribed by law if parties with conflicting interests do not participate in such a procedure. A public administration body is only authorised to adjudicate an administrative matter directly if, at the time of initiating the administrative procedure, the state of facts may be established on the basis of all the information available to administrative bodies or on the evidence submitted by the party[37]. The power of public administrative bodies to decide on an administrative matter directly is sometimes prescribed by law in specific areas of administration. On the other hand, an investigatory procedure is conducted when it is necessary to establish facts and

[35] General Administrative Procedure Act of 2009, amended 2021, art 7, art 30.
[36] General Administrative Procedure Act of 2009, amended 2021, art 40 (1).
[37] General Administrative Procedure Act of 2009, amended 2021, arts 49–50.

circumstances important for clarifying things, when two or more parties with conflicting interests participate in the procedure or to enable the parties to realise and protect their rights and legal interests[38]. It follows from the above that an administrative matter can be adjudicated directly solely if only one party is engaged in the process, if the public administrative body at the time of initiating the administrative proceeding had found all the facts necessary for adjudication, regardless of whether these facts are stored in official records or whether evidence of their existence has been provided to the public administrative body by the party, and if it is not necessary for the party to make a statement or clarification in the proceedings in order to protect their rights or legal interests. In all other cases, the public authority in question should conduct an investigatory procedure in which the party has the right to make a statement in order to protect their rights and legal interests which prevents the adjudication of the administrative matter exclusively using algorithms and AI.

Administrative procedures are initiated *ex officio* if this is required by law or necessary to protect the public interest. In the examples of the collection of taxes and other public benefits that are levied annually or periodically, the law prescribes that taxpayers' and their financial obligations be determined on an annual basis, usually on a specific date[39]. Such procedures are initiated on the basis of data contained in the official records of taxpayers and the assets or activities they pursue. Therefore, it is the procedures that are initiated *ex officio* and based on a specific legal provision provided for in the law for a specific administrative area. Such proceedings are considered particularly suitable for adjudication using algorithms and AI. Administrative procedures that are initiated *ex officio* but aim to protect the public interest, as well as administrative procedures that are initiated at the request of a party, will only rarely be suitable for adjudication using such technical support.

Administrative procedures initiated to protect the public interest are usually initiated when carrying out an inspection or

[38] General Administrative Procedure Act of 2009, amended 2021, art 51. See I. Borković, *Upravno pravo* (2002) 420.

[39] For example, the data relevant to the deduction of tax for a holiday home must be submitted to the local self-government unit no later than March 31 of the year for which the tax for holiday home is adjudicated. See Act on Local Taxes of 2016, amended 2017, 2022, 2023, art 49 (2).

other surveillance when it is found that a citizen or legal entity is violating the law in the exercise of an activity or is disturbing public order and safety, devastating the space or the environment, etc. In such cases, the public administrative body should first find the facts relevant for adjudication, relying on conducting investigations, taking witness statements, or reviewing the findings and opinions of experts[40]. Facts relevant to the adjudication of administrative matters are found with respect to the particular nature of a person's activities and are rarely recorded entirely in official records. Data from official records may provide only part of the information relevant to the determination of the facts; for example, whether a building is a cultural monument, whether an area is a maritime domain or public property, etc. However, they are never sufficient on their own to draw a conclusion on the facts.

The same applies to procedures initiated at the request of a party. As a rule, such procedures are initiated so that the party can enforce a right or reduce an obligation imposed on them. In order to initiate such procedures, there should always be a legal basis set out in the law governing the relevant administrative area, which regularly prescribes what must be included in a request to exercise rights and what evidence must be submitted with such a request. It is the task of the official conducting the administrative procedure to first determine whether the motion is comprehensible and whether it contains everything that is required by law in order to be able to pursue it. Furthermore, it is the task of the official to check whether or not all the requirements prescribed by law governing a particular administrative area have been met. It is therefore clear that a series of measures to be implemented prevent administrative decisions from being made exclusively by algorithms and AI.

The General Administrative Procedure Act prescribes the format and content of an administrative decision. It must be made in writing[41] and include a header, introduction, disposition, explanation, instructions about legal remedies, the signature of the official, and the seal of the administrative body[42]. It is important to emphasise that an administrative decision under the mentioned Act

[40] See General Administrative Procedure Act of 2009, amended 2021, arts 58–70.
[41] Exceptionally, an administrative decision may be made orally if it is necessary to take urgent measures to ensure public order and safety in order to eliminate an imminent danger to human life and health or to property of major value. See General Administrative Procedure Act of 2009, amended 2021, art 97 (1–2).
[42] General Administrative Procedure Act of 2009, amended 2021, art 98 (1–6).

may also be issued on a template form, that is, printed on a form whose content and appearance are prescribed in advance. This legal provision made it possible to issue administrative decisions using algorithms and AI a long time ago, thus making the work of public administration more efficient and cost-effective. The computer programs used by the public authorities in their work contain template forms for some administrative decisions, the structure and content of which are harmonised with the requirements prescribed by the General Administrative Procedure Act. In other words, the administrative decisions drawn up on the template form contain all the elements required by law. With the amendment to the General Administrative Procedure Act of 2021, the legislator has permitted such decisions to be signed using the electronic signature of an official and/or authenticated via the electronic seal of a public administrative body[43]. By eliminating the need to print and certify these administrative decisions, another important step has been taken toward the use of algorithms and AI in adjudicating administrative matters. Therefore, in Croatia, digitally signed and sealed administrative decisions can be delivered to the parties electronically to the email address specified in the application, to the address from which the application was sent, or to the party's user box in the information system connected to the state information infrastructure[44]. Administrative decisions issued on template forms usually face the criticism that the explanations they contain are not sufficiently tailored to the individual parties but are standardised for a certain type of administrative matter. Therefore, the parties often consider that they are not specified precisely enough, which can be considered one of the shortcomings of such decisions.

It can be concluded that, in Croatia, adjudication in administrative matters can be made by algorithms and AI. Although there is no general legal regulation allowing this, numerous provisions of the General Administrative Procedure Act speak in favour of it. However, it is not permissible to adjudicate using algorithms and AI in all administrative matters. In general, this aid can be used primarily in procedures that are initiated *ex officio* and adjudicated directly, based solely on the data contained in the official records of the public administrative body. Only in

[43] General Administrative Procedure Act of 2009, amended 2021, art 98 (7–8).
[44] General Administrative Procedure Act of 2009, amended 2021, art 94.

proceedings of this kind does the public administrative body have all the information necessary to establish the facts required for an adjudication. The accuracy and truth of these facts does not need to be separately verified, and the party does not need to be heard in order to protect their rights and legal interests. Although at first glance it may appear that such strict provisions significantly restrict adjudication using algorithms and AI, this is not the case, since the number of such administrative cases on an annual basis is not significant.

The most serious criticism related to adjudication in administrative matters using algorithms and AI focuses on the possibility of basing the decision on incorrect facts resulting from inaccurate data in the official records, on which the party has not had the opportunity to comment. However, the possibility of making a wrong decision for this reason is no different from when the decision is made by an official of a public administrative body by direct adjudication. The reason for such errors is primarily changes in facts and circumstances that are not recorded in the official records because they were not even reported to the authority that keeps these official records.

In the event of an unlawful administrative decision due to any form of illegality, the party aggrieved by the decision has the right to appeal as a regular legal remedy. Filing an appeal is the beginning of a review procedure conducted by the court of second instance on the entire procedure of the administrative decision and its substantive correctness[45]. Thus, if an error has been made in finding the facts when adjudicating, which may be due to incorrect data contained in the official records, the party may prove the incorrectness of this data in the appeal proceedings, whereupon it will be corrected in the official records and a new administrative decision will be issued on the basis of the correct data. Furthermore, an appeal is not the only legal mechanism by which an unlawful administrative decision made using algorithms and AI can be reversed. The authority that made an unlawful administrative decision, the second instance body, and the body exercising supervision are required to initiate an extraordinary legal remedy to annul an unlawful administrative decision that imposes an obligation on a party, even after the deadline for filing an appeal

[45] General Administrative Procedure Act of 2009, amended 2021, art 105 (1), arts 109, 113–121.

has expired[46]. The reason for this is that citizens should have confidence in the work of the public authorities and that these are not authorised to use their powers, including powers of adjudication, to the detriment of the public contrary to the provisions of the law. In order to eliminate the illegality of administrative decisions, the parties have access to the judicial review of the legality of the work of the authorities in an administrative dispute, which must be initiated within 30 days of the administrative decision being duly delivered to the party by bringing an action before the administrative court[47].

5. Managing Administrative Court Proceedings Using Algorithms and Artificial Intelligence

Over the last 15 years, the Croatian judiciary has gradually introduced an integrated system for the management of court proceedings: the e-File. Today, this system is used by all types and levels of courts, from municipal courts to the Supreme Court of the Republic of Croatia. The functioning of this system is determined by a set of rules for working in the e-File system, which represents the beginning of the implementation of algorithms and AI in the field of administration and work on court cases[48]. This system includes standard applications, computer and telecommunications equipment and infrastructure, system software, and tools, as well as all data entered, stored, and transmitted from the registers kept by the courts. The administrative courts also use algorithms to assign cases for resolution, which include rules for the automatic random and automatic circular assignment of cases to resolvers. Cases are assigned to judges according to the specialisations defined in the annual work plan, with the exceptions prescribed in the framework standards for the work of judges, which are determined by the annual work plan defined by the weight of each type of case, the area of processing of each type of case, and its location. On the other hand, they are also assigned through an automatic circular allocation, which is applied in cases where

[46] General Administrative Procedure Act of 2009, amended 2021, art 129 (1), art 131.
[47] See Administrative Disputes Act of 2024. On administrative dispute in Croatia, see Dario Đerđa, *Upravni spor*, (Rijeka: Pravni fakultet u Rijeci, 2017).
[48] Rulebook on the e-File system of 2015, amended 2015, 2016, 2017, 2018, 2020, 2021, 2022, 2023, 2024.

complete equality of allocation or urgency of action is required. In this system, each judge is randomly assigned a topic to work on. After all judges participating in the random assignment for a particular type of issue have received an issue to work on, the assignment process is repeated. In this way, uniformity is achieved within a certain type of cases and the number of cases[49].

The e-File system is also a database that provides public access to basic data on administrative court proceedings via the e-Case (Cro. *e-Predmet*) application[50]. It is a public and free service for parties, lawyers, and other interested persons participating in court proceedings. Searching by court and case number allows parties to find out about the progress and dynamics of case resolution in regular and appeal proceedings. As the system updates the data on the cases once a day, the parties gain an almost immediate insight into the status of the proceedings and the administrative courts are relieved of daily inquiries. As a result, the judges of these courts can devote themselves more effectively to resolving cases. In addition, the parties to the proceedings have the opportunity to access the content of their cases in more detail by being able to download documents that are available in electronic form via the e-Communication (Cro. *e-Komunikacija*) application, which is also based on the algorithmic generation of documents[51].

The latest investment in improving the e-File system will upgrade this system and all its modules, moving towards a centralised hardware and software solution, which should allow for better and more cost-effective upgrades and sustainable development, as well as the stability, functionality, and security of the e-File system. In addition to improved digitalisation measures, the advanced possibilities of keeping files in electronic format lead to a more efficient functioning of administrative and judicial authorities, as they allow a faster 'circulation' of data, faster statistical storage and analysis of data, connection with other information systems of various administrative authorities, and

[49] Rulebook on the e-File system of 2015, amended 2015, 2016, 2017, 2018, 2020, 2021, 2022, 2023, 2024, art 3.

[50] Ministry of Justice and Administration of the Republic of Croatia, e-Case, available at https://e-predmet.pravosudje.hr, accessed 20 July 2024.

[51] E-Communication, available at https://e-komunikacija.pravosudje.hr, accessed 20 July 2024.

public monitoring of files, namely through online portals and e-bulletin boards, etc.[52].

6. Conclusion

Algorithms and AI play an important role in Croatian public administration today. In the last 20 years, public administration in Croatia has become highly computerised and digitalised, and ICT tools are used intensively in the work of public administration. Public administrative bodies are connected through the state information infrastructure, which enables them to store official records, exchange data, simplify mutual communication, and facilitate communication with stakeholders. The digitalisation of official files of all public administrative bodies in Croatia was a prerequisite for the functioning of a number of online services through which parties can directly obtain electronic certificates of the data kept in official files.

It is worth noting that the possibility of solving some administrative issues with the help of algorithms and AI has existed in Croatia for several decades, especially those related to the financial obligations of natural persons, which are determined periodically. However, solving urgent problems with the help of these technologies is still subject to numerous limitations. For example, adjudication in administrative matters can only be made with the help of algorithms and AI in procedures that are initiated *ex officio*, based on a specific legal obligation and where all the facts relevant to the decision are known to the public authorities at the time the proceedings are initiated.

Digitalisation, which goes hand in hand with the use of algorithms and AI in public administration, is particularly prominent in Croatia's administration of court proceedings. Thus, it contributes significantly to the even workload of judges, the online availability of data on the status of files, and the recording of (and searching for) court proceedings. Unfortunately, the wider use of algorithms and AI in the administration of administrative cases has not taken hold, apart from the obligation to enter these cases into the APA IT system (Cro. *ZUP IT*).

[52] B. Ljubanović & B. Britvić Vetma, *Sustav e-Spis u funkciji efikasnijeg djelovanja upravnih i sudskih tijela*, 41:1 Zbornik Pravnog fakulteta Sveučilišta u Rijeci 324 (2020).

Although AI is an integral part of the computer technology we use every day in our lives, its development and application are accompanied by numerous challenges and doubts, especially in terms of copyright, privacy, security, misuse of deepfake content, etc[53]. At the same time, there are numerous challenges, such as the so-called black box problem, the difficult or even impossible assessment of the intention and consequences of using such systems that arise due to the way complex machine learning algorithms internalise and process data[54]. Therefore, especially in recent times, in parallel with the technological development of the AI system, numerous ethical and legal questions have arisen regarding the possibility, justification, and limitation of its use, which each country must take into account when strategically planning normative activities in the future.

[53] For more on this issue, see J.I. Criado, R. Sandoval-Almazan, J.R. Gil-Garcia, *Artificial intelligence and public administration: Understanding actors, governance, and policy from micro, meso, and macro perspectives*, 39:4 Pub. Pol'y & Admin. (2024), and L. Tangi & S. Schade, *AI in Public Administration and Government: Benefits, challenges and risks* (2023), at https://reform-support.ec.europa.eu/system/files/2023-10/Day%202%20-%20AI%20in%20Public%20Administration%20and%20Government%20-%20Benefits%2C%20challenges%20and%20risks.pdf, accessed 20 July 2024.

[54] See P. Parycek, V. Schmid, A.-S. Novak, *Artificial Intelligence (AI) and Automation in Administrative Procedures: Potentials, Limitations, and Framework Conditions*, 15:2 J. Knowledge Econ. 8390–8415 (2024).

ARTIFICIAL INTELLIGENCE IN THE CZECH GOVERNMENT: POLITICAL AND ECONOMIC HYPE, BUREAUCRATIC PARALYSIS, AND DEMARCATION WITH THE EUROPEAN UNION

*Filip Křepelka**

Abstract

Until recently, the use of artificial intelligence in the Czech government was limited to chatbots communicating with clients and internal analyses. More sophisticated applications require a solid foundation in prior informatisation and digitisation, which remains perfunctory in Czechia, according to international assessments. In addition, the legal uncertainty surrounding artificial intelligence decision-making calls for a national legislative response. Specifically, it should address (de)personalisation, verifiability and the use of personal data as input in machine learning. The European Union's Artificial Intelligence Act is not sufficient in this regard.

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1. Introduction: Defining the Topic, and Artificial Intelligence**

In discussing the deployment of artificial intelligence (AI) in government, this article adopts a broad definition of government, encompassing not only the administration but also the police and judiciary. Nevertheless, it is important to note that it will not cover the entire government. Specifically, the article will not address the deployment of AI in military training, nor will it address the potential use of such technology in warfare. The military is exempt from the emerging civilian legal frameworks, although its use in war remains subject to humanitarian laws[1].

** The author expresses gratitude for valuable comments from professors Marta Infantino, Angela Ferrari Zumbini, and Giacinto della Cananea, as well as from faculty colleagues Jakub Harašta, Anežka Karpjáková, Jakub Míšek, Matěj Myška, Radim Polčák, David Sehnálek, and Tomáš Svoboda. Indeed, AI has

The deployment of AI in the processes of lawmaking and the formulation of domestic and foreign policy may give rise to concerns that people could become dominated by robots. Nevertheless, its capacity to verify the consistency of drafts or to identify potential risks may prove beneficial. Even computers from previous generations were capable of outperforming chess champions, a competition which is often equated with politics. It would therefore be prudent to consider the deployment of AI in these areas. That said, the primary reason for considering the use of AI today is its potential to relieve the human workforce of routine tasks and enhance overall performance[2].

The research in this article extends to public services, including education, healthcare, and infrastructure. It should be noted that the definition of "public services" is not precise, as the private sector plays a significant role in the delivery of these services, but which this report will not address specifically. Industry, agriculture, transportation, and banking/insurance will only be mentioned if subject to administration or adjudication.

The article will not provide a detailed account of the contribution of the Czech software industry to the development of AI. The software industry has flourished for decades in the Czech Republic, which has a long industrial tradition. This success can be attributed to the technical schools and universities in the country, as well as the enthusiasm of many individuals. Additionally, the relatively low salaries in the Czech Republic have enabled the industry to gain a foothold in international markets. It is reasonable to suppose that the Czech software industry has begun making a meaningful contribution to AI[3]. It would therefore be remiss to

rapidly become a topic of growing interest among law faculty members. The article has been enhanced with the assistance of the DeepL app.

[1] International Committee of the Red Cross and Geneva Academy (A. Greipl), *Expert Consultation Report on AI and Related Technologies in Military Decision-Making on the Use of Force in Armed Conflicts* (Geneva: ICRC, March 2024), at https://www.geneva-academy.ch/joomlatools-files/docman-files/Artificial%20Intelligence%20And%20Related%20Technologies%20In%20Military%20Decision-Making.pdf, accessed 6 October 2024.

[2] Concerning the European Union as a unique supranational organisation, see C. Starke & M. Lünich, *Artificial intelligence for political decision-making in the European Union: Effects on citizens' perceptions of input, throughput, and output legitimacy*, 2 Data&Policy (2020), doi:10.1017/dap.2020.19.

[3] Concerning the recent progress of artificial intelligence worldwide and the contribution of particular countries to it, see the publications and reports of

disregard this industry, as it may also offer insights pertaining to the ethical and legal implications of AI and its implementation in the aforementioned public sector.

The process of computerisation has been underway for five decades, with the earliest instances emerging under Czechoslovak Socialism. However, the digitalisation of various data, interconnection in institutional networks, and the rise of the Internet, with robust information and communication technologies, have enabled novel applications of IT, which facilitate the management of complex processes based on sophisticated data analysis. This article will focus particularly on developments in AI, which will be regarded as the most sophisticated form of this kind of IT, comprising data analysis based on machine learning and self-improvement, with the capacity to interact with the general public in human language.

It is therefore necessary to distinguish between AI and automated algorithms. Traffic speed surveillance, based on a radar connected to a camera, results in the identification of vehicles and the issuance and delivery of orders, becoming now a reality. Similarly, the calculation of property taxes has been automated, with no use of AI. Experts have identified several distinct levels of AI, which allows us to avoid the dichotomy between what is often referred to as 'usual' or 'old' IT and what is now being called 'new' AI. Nevertheless, the ability to automate appears to be a prerequisite for the practical implementation of AI.

2. Economic, Political, Societal, and Academic Hype

The discourse on AI in the Czech Republic is shaped by a multitude of actors from diverse backgrounds. The media, including newspapers, are directing public attention to the potential applications of AI. A considerable number of news outlets have reported that the Czech private sector is utilising or planning to utilise AI. In addition to demonstrating awareness of the technical prerequisites, experts and managers also exhibit a clear understanding of the need for effective governance. The aforementioned webpages provide information regarding

Human-Centered Artificial Intelligence at Stanford University (see https://hai.stanford.edu, accessed 6 October 2024), especially its annual reports. Unfortunately, rankings often indicate the 'top 10', to which Czechia (unlike Israel, Singapore, and Switzerland) does not belong.

conferences, which have attracted the participation of politicians, private enterprises, academia, research institutes, ministries, and regional and local authorities, thereby indicating a general interest in AI. However, the most pertinent participants in this discourse are private stakeholders (a), the government (b), and academia (c).

2.1. Interest Representation and Emergent Lobbying

The Czech Association for Artificial Intelligence (*Česká asociace umělé intelligence*)[4], established in 2023, appears to be the primary organisation for Czech business entities engaged in education and networking related to AI. The association represents over 220 companies and institutions, including prominent software providers, advertising agencies, construction and machinery companies, educational institutions, financial services providers, regulatory bodies, and universities.

As might be expected, this association is calling for the Government to pay closer attention to, and offer greater support and preference for, the field of AI. Nevertheless, there is no evidence of lobbying in relation to specific legislative proposals. It is conceivable that even the industry itself is uncertain with regard to its position and interests.

2.2. Government Policies on Artificial Intelligence

The government's approach to AI reflects a convergence of private sector interest and government engagement. In order to align with the approach taken by other countries and meet the expectations of the European Union, the Ministry of Industry and Trade prepared the National Artificial Intelligence Strategy for the Czech Republic in 2019, which was subsequently approved by the Cabinet[5]. Following the parliamentary election held in 2021, which resulted in a different governing coalition, the Cabinet updated the National Strategy for Artificial Intelligence in the Czech Republic 2030 in July 2024[6].

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[4] Using the new domain established for this technology in its webpage, which is, surprisingly without an English translation, see https://asociace.ai, last accessed 6 October 2024.

[5] Ministerstvo průmyslu a obchodu, *Národní strategie umělé inteligence v České republice* (2019), at https://vlada.gov.cz/assets/evropske-zalezitosti/umela-inteligence/NAIS_kveten_2019.pdf, last accessed 6 October 2024.

[6] Ministerstvo průmyslu a obchodu, *Národní strategie umělé inteligence České republiky 2030* (2019), at https://www.mpo.gov.cz/assets/cz/rozcestnik/pro-media/tiskove-zpravy/2024/7/AI_strategie.pdf, last accessed 6 October 2024.

These documents reiterate European Union initiatives and discuss the purported capabilities of the Czech IT industry and related academic research in the field of informatics in general and AI in particular. They promise the widespread use of the latter in a broad range of activities, including research, development, and innovations, education and expertise, the labour market and workforce, industry and business, and, crucially to this report, in public administration and public services.

The aforementioned strategies establish and revive internal advisory and coordination boards for AI, comprising representatives from the majority of ministries and specialised agencies. The documents also address the security issues associated with AI and its legal and ethical implications. However, they do so in general terms, without identifying – even with a brief mention – the principal issues this report addresses.

2.3. Intellectuals and Academics

A number of intellectuals have expressed their reservations regarding the ethical implications of AI in various media outlets. Some express concern that its development may lead to intensified control over the population, while others fear that it may result in unemployment, as well as the subjugation or even extermination of humans. Such concerns have been a feature of Czech culture for the past century. In 1920, Karel Čapek published the novel and theatre play R. U. R. (Rossum's Universal Robots), in which he explored the development of robots, their manufacture, empowerment and subsequent rebellion. The term 'robot' has been adopted into numerous languages, deriving from the Czech word for *corvée*[7].

Nevertheless, it would be inaccurate to suggest that this innovative information technology is the subject of permanent or significant attention. Recent crises have become more urgent. In any case, the majority of the general public, including those in the professions, possess a limited understanding of the characteristics of AI, its accomplishments, constraints, and future prospects.

It is beyond doubt that the rapid development of AI also has an impact on academia. Informaticians are engaged in both theoretical and practical pursuits, whereas other experts are concerned with the deployment of such technologies in their research. Funding is provided through grants.

[7] K. Čapek, *Loupežník. R.U.R. Bílá nemoc* (1983) 340 f.

Such attention also gives rise to scholarly debate on the ethical[8] and legal implications of AI. A brief full-text search of the Internet with relevant keywords (e.g. 'AI' and 'law') reveals a considerable interest in this area. A number of commissioned studies[9], in addition to several monographs[10] and dozens of papers[11], have been published on the ethical and legal aspects of AI.

3. Perfunctory E-Government: Analysis and Explanation

The widespread interest in AI has led to a closer examination of its use by the Ministry of the Interior in its "Analysis and Evaluation of Potential for Deploying of Automatisation and Artificial Intelligence in Public Administration Agendas" of 2023[12].

In addition to reiterating European and national initiatives and strategies, as well as examples of the deployment of artificial intelligence abroad, this analysis presents examples of the use of AI in the Czech public administration sector that do not align with the established definitions. These examples include the use of AI by administrative authorities, including the police, but exclude the judiciary, which is regarded as an independent third branch of government administered by the Ministry of Justice. They also

[8] Among others, see A. Jedličková, *Etické aspekty rozvoje umělé inteligence* (Ethical aspects of development of artificial intelligence), 13(2) Anthropologia integra 55–62 (2022).

[9] Ústav státu a práva Akademie věd ČR (the State and Law Institute, Czech Academy of Sciences) [A. Krausová, J. Matejka, A. Ivančo, E. Fialová, V. Žolnerčíková, T. Ščerba], *Výzkum potenciálu rozvoje umělé inteligence v České republice. Analýza právně-etických aspektů rozvoje umělé inteligence a jejích aplikací v ČR* (2018), at https://vlada.gov.cz/assets/evropske-zalezitosti/aktualne/AI-pravne-eticka-zprava-2018:final.pdf, accessed 6 October 2024.

[10] L. Kolaříková & F. Horák, *Umělá inteligence & právo* (2020); B. Štědroň, *Právo a umělá inteligence* (2020); J. Zibner, *Umělá inteligence jako technologická výzva autorskému právu* (2022).

[11] J. Provazník & J. Mulák, *Roboti za mřížemi - je české trestní právo připraveno na rozvoj umělé inteligence?*, in T. Gřivna, H. Šimánová, M. Richter (eds.), *Vliv nových technologií na trestní právo* (2022) 256–279.

[12] Ministerstvo vnitra, *Analýza a zhodnocení potenciálu využití automatizace a umělé inteligence v agendách veřejné správy* (2023), at https://www.mvcr.cz/soubor/analyza-a-zhodnoceni-potencialu-vyuziti-automatizace-a-umele-inteligence-v-agendach-verejne-spravy.aspx, last accessed 6 October 2024.

encompass the use of AI in public services such as education, healthcare, and public infrastructure.

Among the events addressing this issue, the Conference on Artificial Intelligence in Public Administration, organised by the Southern Bohemian Region on 4-5 April 2024, is worthy of note[13], as published presentations and interviews voice the concerns raised in this text.

The aforementioned analysis and evaluation makes reference to both automation and AI from the outset. This distinction provides an impetus to review the transformations and modernisations deemed a prerequisite for AI, or anticipated as preceding its meaningful deployment, namely, electronic informatisation. Therefore, the following sub-sections will examine the extent to which public administrations and entities have successfully experimented with informatisation. Yet, it will also be demonstrated that these processes have been uneven and have resulted in a general perception of inefficiency with regard to e-government. Subsequently, we will examine the historical and institutional factors that have contributed to this perception.

3.1. Preliminary Phases of Digitalisation

The preliminary phases of digitalisation are outlined here in a way that is accessible to a general audience, including lawyers and politicians. In the case of individuals belonging to the middle-aged or older age groups, such as the author, it may be possible to rely on their recollection of events, given that the relevant developments date back to before the year 2000. The computerisation of data management began with the use of computers with printers as an enhanced writing apparatus with memory for texts, other software for activities extending beyond writing, the digitalisation of existing data stored on paper, the transformation of these data into information, the collection of new data in digitalised form, the establishment and operation of internal networks of computers, the implementation of a robust backup of data, and interconnection via the Internet.

To exemplify the efficacy of digitalisation in the private and autonomous sectors, we may consider the case of Masaryk University, the author's *alma mater* and place of employment. A

[13] For information available to the general public (in Czech), see http://aivs.kraj-jihocesky.cz, last accessed 6 October 2024, encompassing presentations and interviews with speakers.

number of its faculties were at the vanguard of software, applications and databases pertinent to their respective research and educational activities. In the field of law, computers were initially used as typewriters and as tools to facilitate access to legal databases. The advent of the Internet facilitated access to legal documents and, subsequently, to a certain body of literature.

Then, the majority of educational and administrative agendas underwent a gradual transition to a variety of internal and hybrid information systems. This transformation, embodied in the Information System (colloquially 'IS') of Masaryk University[14], began in 2000, at the outset of the author's academic career in 1998. It was a gradual process, and one might suggest that until recently the vestiges of the previous non-electronic management remained.

It is evident that this informatisation was not without significant effort. In parallel with this development, IT departments expanded at faculties, while several specialised centres emerged. The introduction of computers, their interconnection, subscription to software and databases, including electronic libraries, has led to significant rise in operating costs. Furthermore, it is important to consider the financial implications of electricity consumption and its impact on the environment.

A similar level of creativity has also been observed in numerous municipalities. The author's home city of Brno has recently consolidated its communication with residents regarding public transport, waste disposal, and even decentralised administration in a single user-friendly portal, BrnoiD[15].

The Czech Republic is distinct in this regard. For instance, tax returns and reports on public health and social insurance contributions are based on comparable data and would therefore benefit from integration. The electronic version is available, but its usability is limited. Consequently, a considerable number of individuals who are not legally required to do so continue to submit paper forms, either generated by concerned authorities, or prepared by, among others, the website of a prominent newspaper. These forms are ultimately delivered in person or sent via postal service.

[14] For an English version aimed at international students and observers, see https://is.muni.cz/?lang=en, last accessed 6 October 2024.

[15] For an English version aimed at international users, see https://www.brnoid.cz/en, last accessed 6 October 2024.

Meanwhile, the officials of the three authorities (the tax office, the chosen health insurance fund, and the social security administration) have access to computers on their desks, while the internal databases accumulate the principal data and metadata. Nevertheless, there is still a long way to go before the situation in the Czech Republic reaches that of countries where the authorities collate e-documents and propose calculations for their taxpayers. Moreover, there is no suggestion that the three reports in question will be integrated, even if they all concern income.

3.2. Mediocre Rankings and Critical Perception of E-government

The results of international rankings on this issue confirm a certain scepticism, with the rankings indicating a general level of mediocrity. One may cite the ranking in recent annual versions of the E-government Development Index[16] and E-Participation Index[17], calculated by the United Nations Organisation, or the Key Information and Communication Indicators[18], calculated by the Organisation for Economic Co-operation and Development, or the Digital Economy and Society Index, calculated by the European Union[19]. This relatively low level of development contrasts markedly with the advancement of informatics in the private sector and autonomous hybrid institutions.

The general public is aware of this issue. The prevailing sentiment is one of widespread criticism. Politicians have pledged to implement improvements. From time to time, the authorities initiate major electronic and digital transformation projects. Yet, a number of these e-government initiatives have ultimately proved

[16] For information on UN E-Government Development Index (EGDI), see https://publicadministration.un.org/egovkb/en-us/About/Overview/-E-Government-Development-Index, last accessed 6 October 2024. In 2024, Czechia is ranked 22th among the 27 EU member states.

[17] For information on the UN E-Participation Index, see https://publicadministration.un.org/egovkb/en-us/About/Overview/E-Participation-Index, last accessed 6 October 2024. In 2024, Czechia was ranked 20th among the 27 EU member states.

[18] OECD provides the following ICT indicators: access to computers from home, ICT employment, ICT goods exports, ICT investment, ICT value added, Internet access; for a portal see https://www.compareyourcoungry.org/key-indicators, accessed 6 October 2024.

[19] For EU DESI see https://digital-strategy.ec.europa.eu/en/policies/desi, accessed 6 October 2024. Czechia was ranked 19th.

unsuccessful. Such an outcome may have political repercussions. In a recent development, Prime Minister Petr Fiala has dismissed the Minister of Regional Development, Ivan Bartoš, due to significant shortcomings in digitalisation pertaining to construction administration. This reform has been met with criticism from local and regional politicians, as well as the opposition[20].

A recurring discourse in the media highlights the hypothesis that prominent software developers often gain a dominant position in public procurement due to the limited expertise of their officials, in addition to bureaucratic inaction[21].

3.3. Bureaucratic Paralysis, Legal Remnants, and Decentralisation

As previously stated, a multitude of historical and structural factors contribute to the perception, both at the indicator level and among the Czech population, of an inadequacy in the country's public infrastructure.

The Czech Republic has demonstrated a lack of investment in the improvement of its administrative capabilities. This is evidenced by the absence of research institutes within its borders and the underdevelopment of professional education and training. A significant proportion of state officials, including those in ministerial roles, are remunerated at a level that is below the market rate. In such circumstances, it is difficult for authorities to attract experts. A recent news item revealed that even the Cabinet Office, which serves the Prime Minister and the Cabinet in its entirety, was unable to find an IT expert for several months[22]. This was attributed

[20] For coverage in Europewide news, see T. Nicholson, *Pirates jump ship: Czech ruling coalition loses a member*, Politico (25 September 2024), at https://www.politico.eu/article/pirates-party-czech-republic-quitting-crisis-regional-elections-petr -fiala-ruling-coalition-member/, last accessed 6 October 2024.

[21] For instance, in the aftermath of the catastrophic flooding in Central Europe in September 2024, many have expressed regret at the failure of the state to construct a reservoir, which could have mitigated the damage caused to two cities downstream. It is important to note that the communication strategy employed with the residents of the affected village was inflexible, which ultimately led to their official resistance and the emergence of environmentalist activism. However, the primary focus of criticism is the approval procedures.

[22] M. Nejedlý, *Úřad vlády hledal ajťáka deset měsíců. Stát je není schopný zaplatit* (The Cabinet Office sought an IT-person for ten months, the State is unable to pay them), Seznam Zprávy (25 August 2024), at

to the significantly higher wages in the private sector in a prosperous capital with zero unemployment.

Nevertheless, this underfinancing also affects teachers, social workers, police officers and professional soldiers. Czechia demonstrates a tendency to undervalue the importance of its public sector. The judiciary has been the sole branch of government to enjoy privileged remuneration, which has been effectively protected from erosion by the Constitutional Court. Physicians and nurses have successfully negotiated increased remuneration following threats to seek employment abroad. This apparent neglect appears to have ideological underpinnings. While a 'slim state' may be an idealistic concept, in practice, it can be both underfunded and overburdened.

It would be remiss not to mention the legacy of the Czech Republic's socialist past. As might be expected, the author of this article, who is a law professor, places great emphasis on the role of law as an instrument of the state in a wide range of areas of governance. During the period of Czechoslovak socialism, legal thinking became somewhat rudimentary[23]. The emphasis on individual rights and freedoms in the post-socialist era, the clashes between formalists and rebels, and the influx of new legislation have led to chronic instability.

In the academic world, a lack of understanding of the distinctive national character of Czech law leads to a tendency to prioritise prestigious publications in foreign languages, such as English, while paying insufficient attention to practical matters. However, there is no consensus on this diagnosis, even within the academic legal community. Many would argue that no such crisis exists or that the nation and its state have already overcome it.

Furthermore, decentralisation gives rise to a further problem. All observers would classify the Czech Republic as a unitary state. Indeed, the central government (stát, i.e. the state in Czech) is responsible for enacting all significant laws and for controlling taxation and redistribution. The allocation of resources by the state to regions and municipalities represents a significant

https://www.seznamzpravy.cz/clanek/domaci-politika-zacarovany-kruh-stat-neni-schopny-zaplatit-ajtaky-digitalizace-je-drazsi-258310, last accessed 6 October 2024.

[23] For an international readership on socialist and post-socialist law, see U. Kischel, *Rechtsvergleichung* (2015) 571–594, or the same chapter in English translation (U. Kischel, *Comparative Law* (2019, A. Hammel translator).

aspect of the political and economic landscape. Additionally, the role of complex subsidies, including those financed by the European Union, is considerable.

The state is divided into thirteen regions and the capital city, which constitute the first level of government. The second tier comprises six thousand municipalities. The larger cities are subdivided into autonomous circuits or wards. The regions and municipalities (which are divided into three categories for the implementation of national law) participate in the enforcement of state laws (which have been delegated to them) in addition to self-governance (which is conducted on an independent basis). These subdivisions have been the subject of criticism on the grounds that the regions lack a tradition of their own. Indeed, there were autonomous provinces in the past: Bohemia, Moravia and Silesia. The number of municipalities is notably high in comparison to the majority of other countries[24]. The socialist regime amalgamated many of the traditional subdivisions, so the process of democratisation resulted in the re-establishment of minor municipalities. Concurrently, the state halted this process by imposing a requirement of one thousand residents for the establishment of new ones. Nevertheless, efforts to consolidate the existing entities have encountered considerable resistance. The formation of voluntary consortia has rarely been successful.

The management of this enforcement process is characterised by a notable degree of decentralisation, with the use of IT playing a pivotal role. For instance, three apex courts, which belong to different subdivisions, developed their own internal information systems independently.

Public universities, regional schools, hospitals, and other public institutions and enterprises (social services, infrastructure) also purchase or develop software and operate their information systems independently for a variety of purposes. The author has already expressed appreciation for his university, noting that some universities operate less user-friendly information systems, and

[24] M. Plaček, D. Špaček, O. František, M. Křápek, P. Dvořáková, *Does excellence matter? National quality awards and performance of Czech municipalities*, 24(4) J. East Eur. Man. 589–613 (2019), at https://dx.doi.org/10.5771/0949-6181-2019-4-589, accessed 6 October 2024; L. Matějová, J. Nemec, M. Křápek, D. Klimovský, *Economies of Scale on the Municipal Level: Fact or Fiction in the Czech Republic?*, 10(1) NISPAcee J. Pub. Admin. 39–59 (2017), at https://dx.doi.org/10.1515/nispa-2017-0002, accessed 6 October 2024.

mentioned the experiments carried out in his city (although he has not provided information on the situation in other municipalities). Indeed, many professionals and clients consider locally developed solutions to be superior, given their negative experiences with national projects and the associated sunk costs.

As indicated in the analysis of the application of AI in the public sector, ministries, regions, and municipalities are engaged in the acquisition and operation of a range of artificial intelligence-based solutions. Furthermore, the financing of this initiative is diverse, involving also the European Union's cohesion programmes[25].

4. Artificial Intelligence in the Czech Government and Public Sector

A review of the literature on the deployment of AI in the Czech administration reveals that it is used to assist clients in preparatory communication, enhance information, improve client documents, and reduce officials' need to respond[26].

It is anticipated that the deployment of chatbots will result in cost savings, with officials being released from their current duties to undertake other tasks. It may be the case that this deployment serves to mitigate deficiencies in the provision of guidance to clients or subjects, or in the complexity of governance.

The 2023 "Analysis and Evaluation" by the Ministry of the Interior does not indicate the deployment of AI for the purpose of identifying suspicious behaviour, instances of non-compliance, or breaches of established regulations[27]. Nor does it indicate any deployment of AI in decision-making as the core activity of the executive branch. However, according to the analysis, the Czech Police have initiated a notable deployment of AI, utilising

[25] Ministerstvo vnitra, cit. at 12, 45–49, listing municipal improvement projects financed by cohesion funds, several involving elements of artificial intelligence.

[26] Ministerstvo vnitra, cit. at 12, 34 mentioning, among others, the municipalities and their districts, Praha 5, Plzeň and Hradec Králové, the Czech Social Security Administration (Česká správa sociálního zabezpečení).

[27] In this regard, the analysis stresses that the Netherlands has deployed AI assertively in the context of welfare fraud, triggering judicial scrutiny: Ministerstvo vnitra, cit. at 12, 60 (mentioning the Dutch system of discovering fraud in social security Syri; for academic discussion of this case, see M. van Bekkum & F. Zuiderveen Borgesius, *Digital welfare fraud detection and the Dutch SyRI judgment*, 23(4) Eur. J. Soc. Sec. 323–340 (2021).

innovative software to enhance facial recognition and combat cybercrime.

In this context, we do not place undue reliance on a single analysis concerning rapidly developing innovative technologies. It seems reasonable to posit that a significant proportion of municipalities did not respond to the questionnaire sent to them by the Ministry, given the constant influx of requests they are subjected to and the fact that this reporting was not obligatory. It is not necessary for other parties to distinguish between the various types of software and applications that this text examines with regard to AI.

It is pertinent to inquire whether there is cause for concern regarding the potential covert deployment of AI, particularly in the light of concerns about its legal and political implications. The extent of such covert deployment abroad is largely unknown, although it is believed to be significant in some countries, such as the People's Republic of China. Given the pivotal role of AI in this scoring of behaviour, there are ongoing scholarly debates about its methods and impact[28].

Nevertheless, the circumstances appear to be distinct in the Czech Republic. Firstly, there is a demand to modernise public administration. Secondly, the management of personal data is subject to restrictions and control, and it is not within the power of state authorities to ignore this.

As to the first point, examples of unpopular administrative law include tax evasion, non-compliance with overly complex building regulations, and the avoidance of regulatory requirements in various business sectors. Moreover, the situation may worsen in the future, particularly with the adoption of the intrusive requirements of the European Green Deal, which calls for a significant reduction in greenhouse gas emissions[29]. It seems reasonable to expect that the authorities would be well advised to select agendas that could be more effectively and intensively

[28] Among others, Z. Zuo, *Governance by Algorithm: China's Social Credit System* (2020), at https://www.finance.group.cam.ac.uk/system/files/documents/GovernancebyAlgorithm_CERF_Zhenbin6.16.2020.pdf, accessed 6 October 2024.

[29] For the role of innovative information and communication technologies in this rapidly expanding EU policy, see I. Kawka, *E-government and environmental protection. Towards more sustainability*, in A. Sikora & I. Kawka (eds.), *The European Green Deal and the impact of climate change on the EU regulatory framework. Searching for coherence* (2024) 55–74.

enforced with AI, a course of action that would enjoy considerable public support.

As to the second point, it would be difficult to hide the use of AI if its acquisition were made transparent acquisition through public procurement. The possibility of experimental use of AI sponsored by software producers cannot be ruled out, although there is no evidence to suggest that this is the case. Notwithstanding the aforementioned transparency, the supply of goods and services to the public sector represents a lucrative opportunity, or so it is perceived by many. Critics point to the potential for software vendors to encourage dependency among their clients. The situation may be different with regard to AI, as the deployment of such technology may facilitate its learning capabilities. Indeed, unofficial sources indicate that Microsoft has offered its AI language model to Czech ministries for the purpose of analysing their databases.

Four public sectors in particular seem to be the ideal candidates for covert AI experimentations: the judiciary, healthcare, education, and infrastructure and utilities.

As to justice, the report by the Ministry of the Interior does not address the judiciary, as this is the responsibility of the Ministry of Justice. Similarly, other reports and media sources do not refer to the use of AI in this branch of government. We will return to the relationship between Czech courts and AI in the next section.

Regarding healthcare, it should be stressed that the Czech population expect optimal healthcare with comprehensive coverage. Indeed, international rankings indicate that the quality of Czech healthcare is better than in other post-socialist countries[30]. One might debate whether the tradition encompasses the legacy of socialism, the regulated competition between hospitals and other service providers, and the multiplicity of public health insurance funds that contract these providers. The implementation of AI in the field of medicine, with the objective of enhancing diagnostic and therapeutic procedures, would undoubtedly constitute a valuable contribution if it were feasible. Both public and private

[30] Unfortunately, the most comprehensive and thus convincing European Health Consumer Index (see https://healthpowerhouse.com/publications/, accessed 6 October 2024) ceased to emerge since 2018. For surrogates, see Legatum Prosperity Index – Health sub-index, at https://www.prosperity.com/rankings, accessed 6 October 2024. Czechia usually ranked the best among post-socialist countries or at par with Estonia and Slovenia in these rankings.

hospitals are equally capable of deploying these technologies. However, it is evident that this is a matter that extends beyond the purview of the government.

As to education, research in universities and research institutes includes advanced information technologies and a comprehensive understanding of AI. It seems reasonable to assume that AI will also be deployed in other scientific, technological and medical research. From the students' perspective, it is not uncommon for students to use the Internet when composing essays, albeit in ways that are not in accordance with academic standards and ethics. Universities adopt disciplinary measures and search programs to combat plagiarism. The advent of AI has recently become a significant concern, particularly among students and young researchers who are well-versed in digital technologies and online communication. They are rapidly acquiring knowledge about publicly available chatbots, which are becoming increasingly sophisticated. Universities require students to attest that they have not used such resources in the preparation of their assignments, or they provide guidance on the acceptability of their use[31]. It would be useful to determine whether the updates to these anti-plagiarism programs have already reached the level of AI. One may hope that AI could be conceived of as a dedicated, perceptive, and patient educator of students and pupils, including those with special needs. Nevertheless, it seems that for the time being, use of AI in education is minimal. Even Masaryk University, which is widely regarded as one of the most advanced universities in the field of informatics and which has an IT faculty of offering curricual specialised in AI[32], as revealed by an informal inquiry conducted by the author as an insider, engages in experimentation with this technology only in the context of internal analyses. It does not utilise AI in teaching students.

The fourth sector comprises infrastructure and utilities, including road transport, water and sewerage, and other services

[31] See the document available at the author's Masaryk University, at https://www.muni.cz/o-univerzite/uredni-deska/stanovisko-k-vyuzivani-ai, accessed 6 October 2024, also available in English at https://www.muni.cz/en/about-us/official-notice-board/statement-on-the-application-of-ai, last accessed 6 October 2024.

[32] See the promotional information of the Master's degree programe in Artificial Intelligence and Data Processing at Masaryk University: https://www.muni.cz/en/bachelors-and-masters-study-programmes/22961-artificial-intelligence-and-data-processing, last accessed 6 October 2024.

provided by entities under the control of the state, regions and municipalities. It is reasonable to assume that these entities have commenced to deploy AI to optimise their services in a manner similar to that observed in other developed countries.

There has been no recent information on the use of AI in leading hospitals or public health insurance funds for treatment efficiency, the allocation of scarce resources, or the identification of futile treatment. These funds frequently demonstrate benevolence towards requests for financing innovative treatments, including those that are exorbitantly expensive and presented as promising. In some instances, administrative courts have compelled them to do so. It is reasonable to posit that many educators have long aspired to have robots evaluate written examinations. The advent of AI may facilitate this, including the use of chatbot examiners. It seems reasonable to suggest that the use of AI in both industries will give rise to significant upheaval.

5. The Absence of Specific Provisions for Artificial Intelligence in Government

The absence of a specific legal provision addressing the deployment of AI in the Czech Republic is a notable gap in the country's legislative framework. Additionally, no proposals such as a law or statute on the subject were put forth to enact legislation pertaining to AI.

Nevertheless, it would be erroneous to view this absence as anomalous. Globally, many states have yet to implement comprehensive legal frameworks to address the rapidly evolving field of AI.

It is important to note that there is no explicit provision addressing AI, either in general or in specific legislation. The adjective and substantive "*umělá intelligence*" are the settled equivalent of "Artificial Intelligence" in the absence of an abbreviation such as AI (spelt in English) that stands for it. It would be erroneous to exclude complex descriptions using alternative terminology. Nevertheless, no category or aspect of AI or its sectoral deployment is addressed by such descriptions.

5.1. A Lack of National Laws

A comprehensive search of Czech national legislation in available databases has revealed only a limited number of instances

where the term is used in the entire corpus of Czech law, particularly in selected codes. All the references are irrelevant to the research in question[33].

At the time these pages were written, neither general (horizontal) addressing procedures and authorities nor specific legislation addressing industries or concerns addressed the issue of AI, including its creation as software and its deployment with meaningful provisions.

As mentioned above, several municipalities have started to deploy AI. Nevertheless, the identified modes of use do not necessitate the establishment of a legal framework. It is possible that some local laws may refer to this deployment, but it is unlikely that any specific guidelines will be set forth by municipal authorities.

5.2. Exception: Attorneys and Artificial Intelligence

It is questionable whether soft law should be regarded as equal to genuine (i.e. 'hard') law. Nevertheless, there is an emerging inclination to view such documents as a potential source of guidance. Especially, elucidations by the authorities responsible for the enforcement of the law, encompassing its diverse typology, could provide some insights into their policy.

The 2023 opinion of the Leadership of the Czech Bar Association, which represents the legally mandated self-government of attorneys, constitutes a notable example in this regard[34]. It outlines the desirable and undesirable modes of AI,

[33] These documents address statistics of economic activities, classification of tertiary education (studying informatics encompassing artificial intelligences at technical universities and vocational schools) and considering related software as intellectual property. In some cases, it is unclear whether real artificial intelligence is at stake.

[34] Představenstva České advokátní komory, *Usnesení AD12/2023 Představenstva České advokátní komory ze dne 12.9.2023, Stanovisko k užívání umělé inteligence (AI) při poskytování právních služeb*, at https://www.cak.cz/cs/download/23.%20sch%C5%AFze%20-%20prosinec%202023.pdf, accessed 6 October 2024. This document seems to be an excellent preliminary assessment of AI. Among others, it underscores the lack of definition, or the existence of various systems of artificial inteligence. It is considered acceptable to resort to AI for preparatory administrative purposes, but rejects delivery of legal services by AI. AI can communicate with the public and deliver general consultations comparable to articles in legal journals, but considers it inappropriate to confuse advised clients. It underlines the unpredictability of AI and also reiterates confidentiality concerning AI learning.

while emphasising the variability and reiterating the importance of confidentiality. As such, it forms a noteworthy exception to absent policies on AI.

5.3. No Evaluation of Artificial Intelligence by Courts

In the Anglo-American legal system, which is based on common law, courts develop laws that are then considered precedents. Even statutory law is subject to judicial interpretation. Notwithstanding the Czech Republic's civil law system, it is conceivable that AI could be addressed when applying the principles of administrative and judicial proceedings. There is actually no doubt that the use of AI without the establishment of specific legal provisions could result in judicial scrutiny. It is also reasonable to assume that the highest courts will not refrain from scrutinising specific provisions that permit the deployment of AI and stipulate such oversight if plaintiffs challenge the principles and fundamental rights involved. However, it appears that Czech courts have not yet had the opportunity to do so.

As regards the three Czech apex courts – namely the Constitutional Court, the Supreme Court (for civil and criminal matters) and the Supreme Administrative Court –, it is possible to access their judgments via search engines. These search engines are visibly different from one another, which is a result of the independent development of information systems and webpages mentioned above. A review of the judgments of these apex courts reveals that approximately one dozen of them contained the expression "artificial intelligence". Nevertheless, these decisions seems also to be irrelevant to our search for principles and guidelines for the deployment of AI; the author's sole regret is that he lacked the benefit of AI in conducting this research.

As regards the lower courts, it should be noted that Czech law provides for one appeal in matters of administrative matters and two appeals, namely ordinary and extraordinary (revision), in civil and criminal cases of major importance. In addition, the Constitutional Court accepts individual constitutional complaints. It should also be noted – and this confirms the underdevelopment of IT in the Czech Republic – that there is no systematic publication of the judgments of inferior courts. The ministerial database of Czech judgments[35] is not fully comprehensive. It may be inferred

[35] See the database at https://rozhodnuti.justice.cz, last accessed 6 October 2024.

from this limited accessibility that superior courts frequently reverse these judgments.

That being said, the main problem of the Czech judiciary is that, notwithstanding the stabilisation and improvements that have occurred over the past few decades, the adjudication process can still take years. As a result of the proclivity of superior courts to vacate the judgments of inferior courts and issue guidelines for reconsideration, the adjudication process can span a considerable length of time, often up to a decade. Complex cases in which the interpretation of general provisions emerges, conflicting values play a role (so-called 'hard cases' in legal theory), and the application to new phenomena emerges are particularly prone to delay. Objections to the use of AI based on general principles would undoubtedly fall into this category of cases.

It is estimated that no such cases are pending before the lower courts. There is clearly no reason to file complaints or take legal action if the central state, regions, municipalities and public services do not apply AI in a way that is detrimental towards individuals. Should this situation change, it is expected that attorneys will begin to publicise potential cases, thereby initiating a process of informed debate. In any case, even if the higher Czech courts do issue rulings in this regard, it would be a mistake to take the first published judgments handed down by these courts as the definitive case law on the specific interpretive issue in question. In such instances, a divergence of opinion may necessitate the intervention of an extended panel or plenary.

6. The Permissibility of Deploying AI without Specific Legislation

In the absence of any explicit AI regulation in the Czech legal framework, the crucial question that this paper addresses is whether the deployment of AI in administrative, judicial, and police contexts is permissible without being specifically legislated.

The following considerations are based on the author's interpretation of existing provisions and recognised principles. Following an examination of the current position of legal scholarship on these issues (section 6.1), the subsequent sections will evaluate the potential for claims to emerge (section 6.2). Thereafter, the various approaches that administrative judges may adopt in response to complaints or actions filed by clients or

subjects will be considered (section 6.3-6.7). The following conclusions (section 6.8) will remain applicable until such time as the national legislature reacts by enacting specific legislation or provisions to approve the use of AI, define its characteristics, and either restrict or prohibit its use.

6.1. The Stance of Legal Scholarship

Many Czech authors addressing the legal and ethical aspects of AI have written their texts in English to meet the expectations of scientometrics as set out by their respective institutions, as well as the promises made to grant agencies. It would be unfair to criticise these texts for failing to discuss Czech law, given that there is currently no general legislation or specific provisions addressing AI and its use in the Czech Republic, and that the lack of use of AI by the public sector and it limited diffusion in the private sector have not yet attracted significant judicial scrutiny. Nevertheless, it is a pity that these texts did not examine the legality of AI in accordance with existing Czech legislation and did not suggest amendments to address the challenges and potential issues associated with this innovative information technology.

In the light of the above, we particularly appreciate the recent publications[36] and academic projects that have set this endeavour in motion, resulting in a series of insightful reflections[37]. Furthermore, it could be beneficial to consider the international literature on this topic, as similar issues are present in other countries[38].

6.2. Modes of Deployment

The previous sections have identified several potential uses of AI in government and public services. It is necessary to distinguish between them according to the potential risks they pose to those affected by them.

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[36] Among others, R. Polčák, *Umělá inteligence v justici* (Artificial intelligence in judiciary) 26(1) Soudce 4–17 (2024), and A. Karpjáková, *Zcela automatizované AI systémy a tvorba odůvodnění soudního rozhodnutí v civilním procesu* (forthcoming, courtesy of the author).

[37] Namely, the monothematic issue of Acta Universitatis Carolinae – Iuridica (2024) 2.

[38] For a meta-analysis of existing literature, see R. Madan & M. Ashok, *AI adoption and diffusion in public administration: A systematic literature review and future research agenda*, 40 Gov't Inf. Q. (2023), https://doi.org/10.1016/j.giq.2022.101774, last accessed 6 October 2024.

The potential applications of AI in optimising public services, including those pertaining to education, healthcare, social services, culture, sport and infrastructure, are beyond the scope of this discussion inasmuch as they are in principle beneficial to people. These uses only need to be scrutinised if the benefits for different groups of citizens or clients lead to increased inequality, as the main beneficiaries are those who already have access to high-quality public services. However, caution should be exercised before characterising this as a discriminatory practice.

The use of AI to help customers understand the information they need, to facilitate their submissions, or otherwise to assist them in administrative procedures, thereby reducing the burden on public officials and administrations, also appears to be an acceptable course of action[39]. Only the extent to which such AI can replace the tasks of authorities, where the relevant regulations allow the use of AI by public officials, may be open to question.

Reliance on AI in the justice sector may raise particular issues. The use of AI in judicial proceedings in civil matters may be seen as favouring one party over another, which could be perceived as a violation of the principle of "equality of arms". The use of AI to search for instances of non-compliance with legal requirements or restrictions will inevitably be challenged by those who have been caught, prosecuted, and sanctioned. It is possible that even individuals, enterprises, and institutions that comply with the relevant requirements may perceive such monitoring as an intrusion into their activities. It would be reasonable to posit that any authority deploying such technology should expect to be called to account for its use, particularly if it is not kept in strict confidence.

The most sensitive form of AI in the justice sector however remains its potential use in the drafting of administrative or judicial decisions. When computer software is able to analyse the facts of a case, to evaluate the evidence presented, to consider the relevant legal frameworks, to determine the verdicts, and to formulate related reasonings, AI assumes the role of a decision-maker in lieu of humans.

In addition to its applications in relation to citizens and clients, it is important to consider the role of AI in the analysis of data and documentation, including files and decisions, with a view

[39] For fresh reflection of experiences abroad, namely in Singapore, to domestic readership, see T. Svoboda, *Chatboty ve veřejné správě – stručný nástin* (Chatbots in public administration-short overview), Správní právo 501–516 (2024).

to improving institutional policy. In addition to the considerations regarding data protection, there is a potential for this technology to exert control over the actions of employed officials. It is evident that this would be a highly sensitive issue. The implementation of this technology in the context of legal decision-making is likely to elicit significant opposition from those who are accustomed to exercising influence and discretion in this domain.

6.3. Limitations Regarding the Judicial Functions

The judges or judicial panels involved in the adjudication process are always identifiable in Czechia[40]. A comprehensive set of regulations governs the assignment of cases to specific courts and judges, as well as the designation of deputies. The guidelines for recusals are applicable, while judges are obliged to recuse themselves in the event of a conflict of interest; however, they are not permitted to do so in other cases. It is possible for judicial assistants (clerks) and support personnel (secretaries) to assume preparatory tasks and provide support, including checking language, but they are typically not permitted to make decisions. Something similar occurs in administrative proceedings, in which there is almost always an identifiable "official person" involved[41], despite the possibility of collaboration among various officials in preparing decisions based on complex inputs and a more collective, de-personalised approach to the management of many routine cases. It would therefore be reasonable to conclude that reliance on automated computer operating AI to make decisions in lieu of these individuals would be illicit in the absence of an explicit exception.

This conclusion is confirmed by the fact that the automated aggregation of data and the use of algorithmic systems in judicial and administrative proceedings would probably put considerable pressure on the individual officials involved. There is no doubt that the decision-making process, especially within the judicial system, is characterised by a high degree of personalisation. This can, in certain instances, give rise to a heightened risk for judges presiding over criminal or sensitive civil cases. This is one of the reasons why, in civil law jurisdictions, judges attempt to distance themselves

[40] Nobody could imagine "faceless judges" in contemporary Czechia. Any law introducing them for adjudication of the most serious crimes would undoubtedly face constitutional scrutiny.

[41] See §14 zákon č. 500/2004 Sb., Správní řád (Code of Administrative Procedure).

verbally from the proceedings by addressing plaintiffs, defendants, and witnesses in the third person: "The court requests that you ...".

Nevertheless, it might be interesting to consider whether capable judges and officials could use AI in lieu of their assistants and clerks. In Brno, the judicial capital of the Czech Republic and the home of the three aforementioned highest courts, it is widely acknowledged that, in many routine cases, judicial assistants draft documents that are then reviewed and refined by judges. The directors, chiefs, and bosses of authorities, agencies, institutions, and companies approve the decisions prepared by their assistants, often without in-depth knowledge of the individual cases, by signing papers or clicking in information systems. One might ask whether AI could improve and speed up their work. In addition, with regard to the analysis of legal materials, it is possible that AI could be used to filter case law and literature into categories as either relevant or irrelevant. This task is laborious and prone to the exclusion of relevant cases. It is conceivable that AI could be similarly prudent, but much faster. It could then make connections with facts.

In order to substantiate this hypothesis, it may be useful to consider the deployment of autonomous vehicles as a further example of AI. It is indubitable that these vehicles are capable of error, yet it is equally true that human drivers are prone to similar mistakes. With the implementation of certain enhancements, it is conceivable that AI could operate a motor vehicle with a greater degree of proficiency than some individuals currently permitted to do so. It seems reasonable that AI will soon surpass humans in the ability to describe and assess facts, starting with routine cases[42]. From this perspective, there may soon be a greater willingness to rely on AI in decision-making processes.

6.4. Limitations Deriving from General Guidelines for Administrative Decision-making

In the Central European legal tradition, there are codes that delineate the procedures to be followed by the judicial and administrative authorities, as well as the requirements for the

[42] Similar conclusions, with regard to routine cases, have been proposed by R. Polčák, *Umělá inteligence ve správní praxi*, Správní právo 62–72 (2024) and L. Pavlíček, *Algoritmizované rozhodování u triviálních právních otázek*, 29 Revue pro právo a technologie 229–271 (2024).

reasoning of decisions in the absence of specific legislation. In order to comply with these guidelines, it is necessary to take into account the allegations made, the evidence presented, the generally available information and the applicable legal framework. In practice, this intellectual activity of judges and officials manifests as a description of the reasons (reasoning) that accompany the decision. These texts are written in natural languages and vary in style from one country to another. Notwithstanding the homogenising effects of national and institutional education and training, these decisions nonetheless reveal the individuality of their author.

It is possible to exercise control over reasoning by re-examining the evidence or the applicable laws. At higher levels of the judicial system, complaints and appeals may contain evidence of factual and legal errors. However, it is not possible to control the thinking of the judges and officials who produce the reasoning.

Until recently, little was known about what happens in the human brain and its different parts. Scientific observation of blood circulation and electrical impulses with modern diagnostic methods can locate responses to impulses in the human brain. However, we are still a long way from being able to visualise cognition, thought, knowledge, and ideas. Medical diagnostics, even if technically and economically feasible, would be intrusive and therefore unethical.

One objection to decision making by AI is the so-called black box, our inability to check its operation. Perhaps not all AI demonstrates this phenomenon, but a review must take into account large amounts of data, so such an analysis may require a different AI system. Nevertheless, what should be acknowledged is that even an AI that renders text based on impulses from the aforementioned black box is no different from our inability to follow processes in our brains directly[43].

6.5. Limitations Regarding Cybersecurity and Personal Data Protection

Another reason against the use of AI in government is that it may compromise confidentiality and security. It is therefore important to reiterate that civil servants and judges must respect

[43] Among Czech authors reflecting on the issue in administrative law, see J. Nešpor, *Automated Administrative Decision-Making: What Is the Black Box Hiding?*, 2 Acta Universitatis Carolinae Iuridica 69–84 (2024).

confidentiality, even though some fail to do so. Physical barriers have protected paper files from unauthorised intrusion with the potential for viewing, alteration and destruction. Converting this information into electronic form requires cybersecurity against both espionage and sabotage. Undoubtedly, legal penalties have supported the former barriers and should support the latter.

The question is whether AI can remain confidential to its providers when personal or other sensitive data are required for the internal learning processes inherent in this advanced information technology. There is no need to reiterate the protection of personal data in Europe, as this issue is universal. Nevertheless, the European Union's General Data Protection Regulation has led to interpretations that have restricted many benign activities[44], and it is to be feared that this will also be the case with AI.

6.6. Comparing Artificial and Human Intelligence

It may be worth noting that all government systems select public officials as decision-makers partly on the basis of their perceived ability to make decisions. In addition to knowledge, other virtues – such as caution, perfectionism, decisiveness, resilience, calmness and perseverance – are valuable and their opposites undesirable. Education and training in schools and centres, examinations, assessments, observation of performance and interviews in selection processes have served this purpose.

In the education, army, police and transport sectors, some authorities use psychological tests to screen potential civil servants and judges. The psychology of decision-making should not be completely forgotten, as there are some interesting studies. As mentioned above, judges received the privileged salaries mentioned earlier thirty years ago, when the judiciary was on the verge of collapse. As for newcomers, the Ministry of Justice relies heavily on the psychological testing of newcomers, not to exclude extremes, but to select the best when there is no consensus on excellence in law. Psychologists can serve as gatekeepers in this regard. In this context, it may be helpful to ask AI experts whether the industry is considering the possibility of AI exhibiting preferred

[44] The author agrees with criticism of the GDPR by politician-lawyer A. Voss, *Fixing the GDPR: Towards Version 2.0. Position Paper* (2021), at https://www.axel-voss-europa.de/wp-content/uploads/2021/05/GDPR-2.0-ENG.pdf, last accessed 6 October 2024.

psychological traits. Perhaps it is time to incorporate psychology into the development of AI.

Another argument for comparing machines to humans is that, in many sectors, machines – stationary and mobile – have become more powerful, resilient, precise, careful, durable and reliable than humans. Improvements were slow over thousands of years, but have accelerated with the industrial revolution with motors. Then came automated production in assembly lines and so forth. Some occupations became obsolete and others were reduced. Mechanisation and automation allowed the growth of the service sector, shifting people from agriculture and industry to the service sector. Protests against this, such as the British Luddites, were largely unsuccessful. There is no doubt that these machines and the way they operate create inherent risks. The use of machines has a history of accidents and tragedies, leading to safety standards for temperature, electricity, gas, pressure, weight, speed or radiation. AI is now extending these developments to typical "white collar" jobs, but the problem remains the same: the impact on the workforce and the risks inherent in this innovative technology.

6.7. The (Non-)Personhood of Artificial Intelligence

Thinking about the psychology of AI can lead us astray. Indeed, some people fear the rebellion of robots, while others would indulge in them and acknowledge their personhood. We suggest sobriety here. Firstly, personhood does not depend on physical or mental strength. We now grant it to every living human, and reject exceptions even in cases of severe disability. History teaches us – with slavery, serfdom, prejudice against foreigners, and disdain towards the mentally disabled – that this is not self-evident. Secondly, people personalise animals, toys, motors, vehicles or fictional characters. This personalisation may be even greater in the case of human-like robots (androids).

When it comes to AI in government, some have already begun to perceive "the (virtual) Big Brother is watching you". This is not necessarily a negative feeling; someone may admire such AI in the service of human control.

Despite these developments, for the time being, we refuse to consider AI as deserving of recognition of its personhood and legal

subjectivity[45] as we encounter computers and software. We may come to a different conclusion with regard to genetically modified or artificially nurtured cyborgs, but they are not yet among us.

6.8. What Comes Next?

In the light of the above, we believe that there are two possible approaches to managing AI in government in the near future. The former views it as a risky technology, while the second considers it as an intrusive procedure. Fortunately, these approaches are not mutually exclusive.

Let us start with the first. Machines can be dangerous. There are even technologies that can be dangerous for entire populations, such as nuclear power. A few decades ago, people were justifiably afraid that nuclear bombs and missiles would wipe out humankind. Global warming and the climate crisis, caused mainly by the burning of fossil fuels, are a current concern. Dangerous activities may be carried out by a few individuals or by a large number of people, each contributing to the risky outcome in varying degrees.

As mentioned above, the law has barely taken into account technological improvements in administration and justice, health care, or education. Nevertheless, technological improvements have come about, with typewriters replacing pens, computers replacing typewriters, and digital databases replacing the management of paper files. Digitalisation has allowed a radically more intensive use of personal data that previously remained hidden in files behind locks. From this perspective, AI in government is another disruptive technology requiring evaluation.

The other possibility is to see AI as an intrusive process. The elaborate rules we have today for obtaining evidence from objects, documents and witnesses, for presenting it to authorities and courts in administrative and judicial proceedings, and for evaluating them, have been developed over centuries. Our European imagination is filled with torture, coercion and deception. Not surprisingly, the legal codes governing the investigation and prosecution of crimes contain detailed rules on opening mail, searching notes and books, wiretapping, eavesdropping and search warrants. Failure to comply with these can result in the acquittal of

[45] Therefore, the author disagrees with K. Drachovská, *Umělá inteligence jako nositelka základních práv?* (Artificial intelligence as a subject of fundamental rights), 4 Právník 273–284 (2021), and with the foreign authors the author consulted to elaborate these arguments.

the accused. Similarly, policing laws in liberal democratic countries that can truly be called 'rule of law' states, specify in detail various weapons and other physical instruments and their permissible use. Many administrative laws permit certain forms of control while excluding others. In this context, AI may be seen as an innovative procedural tool that requires new legislation before authorities can use it.

7. European Union Legislation on Artificial Intelligence

It is well known that the EU has recently adopted many texts on digital technologies and AI. This development should be critically analysed. One does not have to be a fan of the European Union's recent wave of regulation in various fields. It is time to debate the use of competences by the EU institutions, as many doubt that the EU's regulatory powers always respect the principles of subsidiarity and proportionality.

Moreover, even those in favour of extensive supranational legislation have to admit that lengthy EU-made regulations and directives often do not provide detailed rules (regulatory density), but rather reiterate ambitions, objectives and principles.

At the same time, the transformation of directives into regulations and the preference for regulations in new areas are developments that can be welcomed with caution. It has become increasingly difficult and frustrating to implement detailed EU directives, and EU Member States' room for manoeuvre has diminished, as the level of detail of these texts has increased[46].

A prominent set of these laws is the package of digital acts, which embody the Digital Strategy as the European Union's flagship policy, promising technological and economic advancement. Sceptics may question this frenetic lawmaking with the phrase: 'the US innovates, China imitates, Europe regulates'. In more detail, Vagelis Papakonstatinou and Paul de Hert have identified several features of this digital lawmaking beyond the aforementioned "act-ification", such as GDPR mimesis (imitating its regulatory approaches) and regulatory brutality (ignoring emerging national approaches). Nevertheless, lawyers will have to apply these laws or help their clients and employers deal with

[46] F. Křepelka, *Transformations of Directives into Regulations: Towards a More Uniform Administrative Law?*, Eur. Pub. L. 781–805 (2021) and F. Křepelka, *Evropské zákony za obzorem* (European Laws Beyond the Horizon) (2023).

them, depending on their position, and interpret them accordingly[47].

The Artificial Intelligence Act (AIA) is part of this package. The Commission proposed this regulation in 2021, and the European Parliament, the Council and the advisory committees reached a consensus, leading to the publication of the European Union's final version in July 2024[48]. The AIA envisages its gradual entry into force over the years to come.

Of course, the AIA may not be the only possible response to the challenges posed by AI. Perhaps the text is over-cautious, and other nations will not emulate it[49]. We suggest comparing this prudence with other sensitive technologies beyond information technology, such as the genetic manipulation of plants and animals, bioethically sensitive treatments, and nuclear energy.

We do not need to examine in this article whether the AIA is an example of brutality against Member States, forcing them to abandon emerging national policies and laws on AI, as the Czech Republic has not yet addressed this technology. What we can say is that the AIA will apply to the administration and judiciary of Member States, despite their competence to organise and run their government, as the only sector that remains beyond the scope of the AIA is the military[50]. The AIA will also undoubtedly result in the prohibition of some e-government practices.

However, as legal scholars concerned with the legal dimension of national responses, we should question whether this regulatory regime is exhaustive and exclusive in terms of restrictions, requirements and procedures and, if not, whether it pre-empts national legislation[51]. If the law only sets minimum

[47] V. Papakostantinou & P. De Hert, *The Regulation of Digital Technologies in the EU. Act-ification, GDPR Mimesis and EU Law Brutality at Play* (2024).

[48] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), hereinafter "AIA".

[49] For similarly cautious pre-enactment scrutiny, B. Martens, *The European Union AI Act: premature or precocious regulation?*, Bruegel Analysis (2024), at https://www.bruegel.org/analysis/european-union-ai-act-premature-or-precocious-regulation, last accessed 16 October 2024.

[50] Art. 2(3) AIA.

[51] On this, see R. Schütze, *Supremacy without pre-emption? the very slowly emergent doctrine of community pre-emption*, 43(4) Common Market L. Rev. 1023–1048 (2006).

standards, the Member States can adopt stricter regulations, just as they can ban nuclear energy, restrict genetically modified seeds and plants, and regulate many bioethically sensitive medical interventions in different ways. The European Union acknowledges this differentiation between nations.

In terms of governance, EU Member States have many options. They could evaluate AI more rigorously, choose among the available AI systems, prohibit them altogether, or consider banning or restricting (some of them) by cautiously interpreting existing laws in the ways sketched out here. The same choices are indeed open to the EU institutions themselves, which could begin to consider adopting a legal framework for the use of AI by the EU in its expanding administration[52].

8. Conclusions: Desirable Approaches to Artificial Intelligence in Government

The lack of provisions on the use of AI in government has recently been critically reviewed by Aleš Kučera, a senior expert at the Chamber of Commerce. He reiterated that no relevant laws address the issue. In a recent conference presentation, he asked the iconic HAL 9000 from Kubrick's film based on Clarke's Space Odyssey whether this super-computer anticipated the use of AI by the Czech Republic in its government[53].

We do not need such a supercomputer to assess short-term prospects. As already mentioned, governance is the Achilles' heel in the Czech Republic, and e-government has become a sensitive issue. Experts point out that no authority wants to deal with AI issues a year before the parliamentary elections. We conclude that the precondition for the feasible use of AI in government is a modern e-government.

Under these conditions, we should not be surprised that Czech politicians and their advisors believe that the European

[52] For a reflection by a Czech author, see P. Hubková, *EU Administrative Decision-Making Delegated to Machines – Legal Challenges and Issues*, 2 Acta Universitatis Carolinae Iuridica 101–120 (2024).

[53] Hospodářská komora České republiky, sekce pro digitalizaci a podporu podnikání [A. Kučera], *AI ve veřejné správě. HALe, je to vůbec možné?* (AI in public administration. HAL, is it possible?) (4 September 2024), see https://www.government.cz/soubor/ai-ve-verejne-sprave-cr-je-to-vubec-mozne/, last accessed 16 October 2024.

Union's AIA covers all aspects of this innovative information technology. The Member States, in turn, need not, and should not, concern themselves with it.

We suggest that such an assumption is misleading. The AIA does not address the dilemmas posed by the use of AI in government. Given its potential for surveillance and decision-making in administration and justice, the use of AI should not be possible without an explicit legal framework. Otherwise, there is a risk that any use of AI by public authorities will come under judicial scrutiny. The national framework may be permissive or restrictive, general or specific to different agendas, but it should be there. Perhaps, a recent analysis delivered by the Organisation for Economic Cooperation and Development can catalyse our thinking on this issue[54].

[54] OECD, *Governing with Artificial Intelligence: Are governments ready?* (2024), at https://doi.org/10.1787/26324bc2-en, accessed 16 October 2024.

THE LAW OF THE ALGORITHMIC STATE IN HUNGARY

Erzsébet Csatlós and Péter Mezei***

Abstract

The digitalisation of public administration and administrative services is a priority for the state, and in recent years, significant developments have been seen in the field of algorithmic governance. Additionally, since 2020, the Hungarian Government has implemented an Artificial Intelligence (AI) Strategy with the goal of building a 'data-driven, service-provider state' over the next decade.

After examining the legislative background of this topic and the daily operations of public administration—particularly in providing public services to citizens—it can be concluded that AI-related developments are still in their early stages. There is little legislative clarity regarding the technological and infrastructural foundations needed for AI integration, such as electronic administration and e-proceedings. Although the AI Strategy is ambitious, and the new legal act on the digital state sets forth promising goals for the future, the current regulatory framework lacks specific legal guidance. Actual implementation remains constrained by societal digital literacy and an underdeveloped IT infrastructure. Legal and academic discussions tend to focus more on the potential future impact of AI rather than its present-day applications.

In conclusion, Hungary is striving for a prosperous future as it navigates a challenging path towards realising a data-driven concept of state.

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1. Introduction to the State of the Art and Methodology

In Hungary, there is no specific legislation addressing *artificial intelligence* (AI) itself, and there is no legal definition for AI. In today's Hungarian public administration, the use of AI applications is not yet widespread, but some AI technologies are starting to be integrated into public administration procedures.

The Digital Welfare Programme was launched in 2015, aimed at digital development in the fields of education, child protection, export, agriculture, startups, and others[1]. Since 2020, Hungary has had a strategy on AI[2], outlining the fields of public administration where it is already in use and also marking the future path of development. AI is not a central legislative issue in public administration; instead *e-public administration* and *e-administrative services* (or, as it is now being called, *digital public administration* and *digital public services*) are the terms in use.

[1] Gov. Decision 2012/2015. (XII. 29.) on the Digital Welfare Program to be implemented by the Government based on the results of the national consultation on the Internet and digital developments (InternetKon). Programmes are available at https://digitalisjoletprogram.hu/en/about.

[2] *Magyarország Mesterséges Intelligencia Stratégiája 2020–2030*, available at https://digitalisjoletprogram.hu/files/2f/32/2f32f239878a4559b6541e46277d6e88.pdf (visited 20 May 2024) [AI Strategy]. See also Gov. Decision 1573/2020 (IX. 9) about Hungary's Artificial Intelligence Strategy, as well as some measures necessary for its implementation.

Hungary is presently undergoing a transition, during which the recently enacted *Act CIII of 2023 on the digital state and certain rules for the provision of digital services* (Digital State Act) is gradually replacing the former regulations on the fundamentals of electronic public services until July 2025.

In Hungary, the history of e-administrative services started with the introduction of the second code of administrative proceedings that replaced the 1957 Act and declared the possibility of conducting *certain* administrative authority procedural actions electronically following 1 November 2005. Also, e-administration has become a fundamental right for the user: the act empowered uers to carry out certain procedural actions electronically and allowed for the electronic communication of official decisions[3].

Over the past two decades, the interpretation of the concept of electronic administrative proceedings has undergone several changes including changes in the concept of centralised and decentralised models[4]; there is yet no uniformly accepted definition in the literature. From the regulatory perspective, it is crucial to note that e-administrative proceedings are not considered an independent type of authority procedure but rather a specific form of proceedings with e-interaction between the user and the authority. Act CCXXII of 2015 on the General Rules of Electronic Administration and Trust Services (GREATS) entered into force in 2016 and became a *lex specialis* to the ordinary administrative procedural code.

Electronic administration is described as procedural acts wherein the client or administrative body issues electronic statements and where non-electronic statements from the client or another administrative body are converted into electronic statements, which are then used during the procedure. The concept of e-administration covers a complex process that includes information and all aspects of interaction between the authority and the clients[5]. Currently, more than 4,000 different types of

[3] Act CXL of 2004 on the general rules of public administrative authority procedure and service (Ket.), Article 8 (1).

[4] B. Veszprémi, *A stratégia-alkotástól a SZEÜSZ-ökig, elméleti alapok*, 16(2) Miskolci Jogi Szemle 355–357 (2021).

[5] Since 1 April 2012 by Act CLXXIV of 2011, Act CXL of 2004 on the general rules of public administrative authority procedure and service, Article 172.
The Regulated Electronic Administration Services (SZEÜSZ) system, introduced in 2012, is built on modularity and standardisation, allowing seamless integration with existing public administration information systems through

authority affairs can be handled online at least at some of its stages. Meanwhile, the use of e-solutions is not as widespread as it could be,[6] mostly because of the low digital literacy of society. Thus, the direction of developments in public administration over the coming years is the implementation of digital public administration with special regard to those age groups that are only able to use the services provided by the digital world with difficulty or not at all[7].

As for the current status of digital public services, the key Digital Economy and Society Index indicators of 2022 showed a mixed picture. Hungary performs well on broadband connectivity. It remained a leader in the take-up of at least 1Gbps broadband, as 22% of households subscribed to such a service in 2021 compared with 7.6% in the EU. The country scores above the EU average also on overall fixed broadband take-up, 5G spectrum and fixed very-high-capacity network coverage. On human capital, however, the country falls beyond the EU average: 49% of individuals have at least basic digital skills, below the EU average of 54%. There was substantial progress on the demand side of e-government with 81% of internet users having engaged with the public administration online in 2021, up from 64% in 2019 and above the EU average of 65% in 2021. However, the quality and completeness of the supply of services for both individuals and businesses remained relatively low[8]. The overarching objective by 2030 is to attain a 60% usage rate of public authority procedures, involving the active participation of 2 million citizens (out of a total of 9,6 million). This engagement will

standardised interfaces. SZEÜSZ modules, which include essential e-government services, can be centrally provided by the state (KEÜSZ) modules. Since 1 January 2016, KEÜSZ has dominated e-administrative services, but legislation permits continued use of SZEÜSZ, and the state must ensure their operation even if no market provider offers them. See B. Baranyi, P. Homoki, T. Kovács, *Magyarázat az elektronikus ügyintézésről* (2018) point 15; A. Orbán, *E-közszolgáltatások rendszerei és folyamatmenedzsment*, in P. Sárvári (ed.), *Informatikai rendszerek a* közszolgálatban I. (2020) 57; Z. Czékmann & G. Cseh, *Elektronikus közszolgáltatások a SZEÜSZ-ök tükrében*, 32 Publicationes Universitatis Miskolcinensis Sectio Juridica et Politica 139 (2014).

[6] E. Csatlós, *The Power of Information: (Digital) Authority Procedure in the 21st Century Hungary*, 16(65) Bulletin of the Transilvania University of Braşov, Series VII, Special Issue.

[7] T. Pilz, *Fenntarthatóság és alkalmazkodóképesség – avagy mi várhat a magyar közigazgatásra a következő években?*, 10(1) Pro publico bono – Magyar Közigazgatás 12 (2022).

[8] Digital Economy and Society Index 2022, *Hungary*, available at https://digital-strategy.ec.europa.eu/en/policies/desi-hungary 3-4.

be facilitated through the use of a data wallet, empowering individuals to manage and use their data[9]. The question now is where AI is behind the numbers.

The exploration of the research topic mainly focuses on the textual review of normative content and available statistics. In Hungary, administrative authority decisions are generally not accessible to the public, except for certain authorities such as the data protection authority and decisions of the ombudsperson. Consequently, comprehensive research on administrative authority decisions may be challenging. However, what is accessible is the judicial review of administrative authority decisions. Court judgments in principle are made publicly available, albeit in an anonymised version, and can be accessed through a database[10]. Since March 2020, apart from some exceptions, the general legal remedy against authority decisions is judicial review[11], if there is a constant and significant practical problem related to a legal provision.

Due to the lack of any official (legislative) definition, in the context of this article, AI will be understood as it is used in the AI Strategy of Hungary: a *software capable of replicating aspects of human intelligence, enabling it to support or autonomously perform processes such as perception, interpretation, decision-making, or action*[12].

Currently, the supporting function is more frequently used than a completely autonomous process with automated decision-making at the end; AI is not (yet) used in decision-making[13].

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[9] AI Strategy, cit. at 2, 20.

[10] Act CLXI of 2011 on the organisation and administration of the courts, Article 163-166. The database is available at https://birosag.hu/ugyfeleknek/birosagi-hatarozatok-gyujtemenye.

[11] Act CXXVII of 2019 on the amendment of acts related to the creation of single-level authority procedures at district level, Article 198; N. Balogh-Békesi, K. Pollák, L. Vértesy, *A közigazgatási hatósági eljárás -jogorvoslati rendszere, különös tekintettel a közigazgatási bíráskodás alapvető kérdéseire* (2022) 6; N. Balogh-Békesi Nóra, *Gondolatok a jogorvoslathoz való jogról*, in Z. Peres & G. Pál (eds.) *Ünnepi tanulmányok a 80 éves Tamás András tiszteletére: Semper ad perfectum* (2021) 48–49.

[12] AI Strategy, cit. at 2, 9.

[13] AI Strategy, cit. at 2, 38; A. Fábián & P. Stankovics, *A közigazgatási döntéshozatal támogatása elektronikus eszközökkel, különös tekintettel a hatósági eljárásra*, 2(1) *KözigazgatásTudomány* 71–84 (2022); Orbán, cit. at 5, 75–91.

2. The General Legal Basis for the Use of AI

The Fundamental Law of Hungary declares that to enhance efficiency, improve the quality of public services, ensure transparency in public affairs, and promote the principle of equal opportunity, the state must strive to incorporate the latest advancements in science and technology[14]. The current state of public administration has been shaped since 2010 by an overarching reform known as the *Magyary Program*[15]. Since its announcement, a strategic way of thinking has guided the development of public administration. The reform's motto aimed to establish *a service-provider state* with a simplified, user-centric approach to public administration where e-administration and administrative services play a central role[16]. The current goal is now to establish the *digital state*[17].

AI was first mentioned in the development strategy of the info-communication sector for the period 2010-2014 as a field worthy of support[18]. The National Artificial Intelligence Strategy of 2020–2030 further anticipated the concept of a *data-driven service-provider state*[19].

To serve these purposes, the GREATS[20] is replaced by the Digital State Act with effect from September 2024. AI-based technology appeared in the legislation in 2021[21], and the new legislation on e-administrative services (which are now called *digital public services*) also relies on technology and services based

[14] Fundamental Law of Hungary, 25 April 2011 [FL] Article XXVI.

[15] Magyary Zoltán Közigazgatás-Fejlesztési Program (MP 11.0), Budapest 2011, 36; Magyary Zoltán Közigazgatás-Fejlesztési Program (MP 12.0), Budapest 2012, 6, 41-45.

[16] Közigazgatás- és Közszolgáltatás-fejlesztési Stratégia 2014-2020, available at http://www.2015-2019.kormany.hu (visited 20 May 2024) 18.

[17] Nemzeti Infokommunikációs Stratégia 2014-2020, available at https://2010-2014.kormany.hu/download/b/fd/21000/Nemzeti%20Infokommunik%C3%A1ci%C3%B3s%20Strat%C3%A9gia%202014-2020.pdf (visited 20 May 2024) 45-53.

[18] Ibid. 105.

[19] AI Strategy, cit. at 2, 38.

[20] Act CCXXII of 2015 on the General Rules of Electronic Administration and Trust Services (GREATS) was in force between 1 January 2016 and 1 September 2024.

[21] GREATS contained references to AI since 2021, when it was modified by Act CXX of 2021 on measures to modernise certain procedures (in force since 2 December 2021). Also, its executive decree, Gov. Decree 451/2016. (XII. 19.) on the detailed rules of electronic administration, mentions the use of AI technology in the field of contracting (GREATS executive decree).

on AI, although it remains indebted to the definition or the regulation on the details or circumstances of the use of AI[22]. As of 30 July 2024, executive decrees are not yet available.

The right to electronic administration is provided by the GREATS[23], and the Digital State Act aims to ensure a developed version for it. It is smartphone-focused and aims to shift identity cards, administration, and signature activities to a mobile application by the end of 2024. A *mobile-friendly approach* prioritises administration primarily on mobile phones (and other portable devices as envisaged by the legislator), allowing citizens to access necessary services anywhere and at any time. The introduction of a new *digital citizenship* concept with a *digital citizenship identifier* aims to simplify administration and eliminate the need to provide personal data for each new case[24].

The main objective of the new Digital State Act is to ensure that *comprehensive digital services* will provide citizens with various digital services, including online identification and signature, secure electronic communication and document management, as well as online payment systems. It promotes the usage of data available in state registers and better cooperation between state bodies. Also, it aims to promote the management of private law legal relationships in digital form by modernising legal processes and transactions. It is important to emphasise that, as a general rule, digital citizenship is optional, except in cases mandated by law. The user profile holder retains the discretion to decide whether they want to apply the new digital services[25].

Digital citizenship is designed to be built upon data managed in authentic state registers. Within the framework of digital citizenship, all state registers and specialist systems will cooperate in a coordinated manner, providing data automatically to the extent necessary for service provision. This ensures that AI is used even without explicit mention of its use. As of now, it can be concluded that the legislator does not generally explore whether AI is the basis when regulating different legal institutions and procedures. Thus the ban on the use of AI does not appear to be a subject of normative regulation either. It is technical information

[22] Act CIII of 2023 on the digital state and the detailed rules of digital services (Digital State Act) Article 47 (5)-(7).
[23] GREATS, Article 8 (1).
[24] Digital State Act, Article 1 and 3.
[25] Commentaries to Act CIII of 2023, Article 1.

that is simply not provided in normative texts. However, exceptions do exist[26]. Also, when the law enlists the central electronic administration services that the government provides through the service provider designated by law, it states that technology based on AI *can also be used* for support services[27]. Beyond this line, the question of AI is not mentioned.

3. AI in the Daily Operation of Public Administration

Without any comprehensive collection and structured review of data (statistics), it is hard to tell which sectors are the most affected by algorithmisation. Also, the numbers presented in this paper are hard to compare; all areas represent a completely different purpose and have significantly different consequences, including legal effects.

In Hungary, AI is used in the banking sector, telecommunication, retail trade, logistics, production agriculture energetics, healthcare, and public administration, to name but a few examples[28]. In public administration, AI is widely used in the following areas: identification for e-administration, telecommunication, and decision-making[29].

The prerequisite for using AI is the possibility of e-administrative proceedings. Since there is no longer a need to physically visit the offices of the public authorities, numerous cases can be efficiently managed online at the website managed by the *National Info-communication Service* (NISZ)[30]. This is a unified

[26] GREATS executive decree, Article 7/B (4) explicitely mentions AI in the case of administration with a video technology connection. When the validity of the user's statement requires the signature of the client and the representative of the authority, these can be replaced by a voice transcription service based on AI.
[27] Digital State Act, Article 47 (1) and (5), GREATS, Article 38 (1) and (5).
[28] AI Strategy, cit. at 2, 14-15. The areas of AI-usage are enlisted by the AI Stategy of Hungary, but the role of AI is not explained and there is no information on the technical background of these services either.
[29] *ÁSZ elemzés, Az állami nyilvántartások és az elektronikus ügyintézés* (2021) 35.
[30] NISZ Zrt. is a private limited company. It is the leading infocommunication service provider in the Hungarian public administration sector. Since September 2022, the ownership rights over it are exercised by the Digital Hungary Agency (*Digitális Magyarország Ügynökség – DMÜ*). DMÜ is responsible for the operation of e-public administration and IT systems and their infrastructure, the unification of e-public administration and IT developments, and the performance of state tasks related to electronic communication activities for government purposes and ensuring the infrastructural feasibility of public administration IT. See Gov.

interface that can be customised by the client, providing the identified customer with a uniformly accessible opportunity to fulfil declarations, procedural actions, and other obligations required for electronic administration. It also allows the client to access electronic administration services. The application integrates various case types available through the *Webes Ügysegéd* (which has been functioning since 1 January 2013), facilitating the electronic administration of records and document systems maintained by the Ministry of the Interior. The number of cases is decreasing as the services are becoming integrated into the other portal (<magyarorszag.hu>)[31]. The interface provides accessible information to everyone, but beyond the detailed description of the cases, the online submission of claims and the achievement of specific services require a secure login facilitated by the modern identification services of the Central Identification Agent.

3.1. Identification for e-Administrative Proceedings

The identification of the client is the initial and essential step in handling administrative matters; therefore, for e-administration, it is also a crucial precondition. There are several types of identification options to start an online procedure, including AI-based solutions[32].

(i) *Client Gate* (*Ügyfélkapu*) is an identification service that enables citizens to securely contact organisations that provide e-administration and electronic public services with a username and password. The identification service has been available since April 1, 2005. This is the oldest and most frequently used identification service (97.75%). As of December 31, 2022, a total of 5,529,775 Customer Portals with valid passwords were registered, indicating an increase of 411,840 from the previous year, representing an 8.05% growth in one year. In 2022, citizens utilised user portal

Decree 307/2022. (VIII. 11.) on the designation of the Digital Hungary Agency Private Limited Company and the definition of some of its tasks, as well as detailed rules related to the coordinated provision of national IT and e-public administration activities, Article 2–6.

[31] *2022 évi monitoring jelentés. Belügyminisztérium – Informatikai Helyettes Államtitkárság Rendvédelmi Informatikai és Elektronikus Rendszerek Működtet*ésért és Fejlesztéséért Felelős Főosztály, Szolgáltatásmenedzsment Osztály [Statistics 2022], available at https://www.nyilvantarto.hu/hu/statisztikak (visited 20 May 2024) 6–7.

[32] GREATS, Article 35.

identification 202,679,914 times[33]. In 2023, a growth of more than 6% was seen in the number of registered persons, and by the end of the year, 5,814,230 persons had valid passwords for the system. As password validity is two years, and to avoid abuses and multiple user ID-s, obtaining first access to the system requires the assistance of a public servant. It is supposed that more than half of the population is able to conduct online e-proceedings[34].

It also allows the usage of *e-Papír* which is a free, authenticated messaging application that electronically connects clients with the institutions connected to the service via the internet in use since 2018[35], so it is like a closed and secured mailing service. Client Gate has been supplemented with an advanced service for enhanced security since 4 June 2022. *Client Gate+* has two-step protection. In addition to the existing user portal username and password, a third datum is needed for identification that can only be linked to the mobile device of the user. During its first seven months, a total of 577,450 individuals used this identification method[36], while in the first half of 2023, 749,498 identifications were carried out this way[37].

(ii) *ePersonal ID* is a permanent ID card with a chip, which has been in use since 2016. This identification method enables two-factor identification: the two factors are possession of ePersonal and knowledge of the corresponding unique, six-digit PIN code[38]. In 2022, 3,266,513 identifications were made by ePersonal ID card which meant an average of 2% of the overall e-cases each month[39]. In 2023, this number was 1,815,021[40].

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[33] Statistics 2022, cit. at 31, 8–9.

[34] Monitoring data 2023, at https://www.nyilvantarto.hu/hu/statisztikak?stat=monitoring (last visited 20 May 2024)

[35] Pilz, cit. at 7, 18.

[36] Statistics 2022, cit. at 31, 9.

[37] *2023. I. féléves monitoring jelentés. Belügyminisztérium – Informatikai Helyettes Államtitkárság Rendvédelmi Informatikai és Elektronikus Rendszerek Működtetéséért és Fejlesztéséért Felelős Főosztály, Szolgáltatásmenedzsment Osztály* [Statistics 2023 I.] available at https://www.nyilvantarto.hu/hu/statisztikak (last 20 May 2024) 9.

[38] Gov. Decree 93/2016 (V.2.) on the necessary amendment of certain government decrees for the introduction of the time stamp service related to the electronic signature of the identity card.

[39] Statistics 2022, cit. at 31, 9.

[40] Identity card statistics (2023), at https://www.nyilvantarto.hu/hu/statisztikak?stat=monitoring (last visited 20 May 2024).

(iii) *Face ID* service enables interaction with authorities from a computer, tablet or smartphone starting from 1 May 2020. Its use only requires a one-time registration, which is done via video communication with the help of a public servant. Following registration, no additional identifier (e.g. username, password or PIN code) need be used. The system will perform the identification automatically, based solely on the client's photo and identity document[41]. The bodies and authorities responsible for e-administration can thus also stay in contact with the client through a system capable of transmitting and recording video and audio based on a live video communication channel. This type of identification has been permitted for telemedicine[42]; to capture a uniform photo and signature for the automatic issuance of a driver's licence, and to register and modify the credentials to the user access portal. It is less frequently used than other identification types; in 2022 the service was used 296,390 times[43], and 164,270 times in the first half of 2023. No data are available for the rest of the year[44].

This type of interaction is possible in administrative proceedings. For telemedicine, the use of AI for identification may also be mandated by ministerial decree. It should be emphasised that only the identification is performed by AI; it is a human healthcare worker that contacts and interacts with the patient, not an AI system[45].

(iv) *Phone ID* (RKTA) is an identification method that can be used to handle some administrative matters over the phone with the help of the staff of the 1818 Public Administration Customer Line. After online registration, the user receives an eight-digit telephone code, and after calling the Line, another six-digit code is given. Together with these ID elements, certain cases can be handled over the telephone. In the light of the Digital State Act and its aims, this is meant to be the future of e-administration. In 2022,

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41 Act CXVI of 2019, Article 38(12); Act CLXXXVIII of 2015 on the face image analysis registry and the face image analysis system, Article 12, 12/A-12/D; GREATS, Article 17/A.

42 Act XCIX of 2021 Article 202; Act CLIV of 1997 on healthcare, Article 106/A. See further Á. Homicskó, *A telemedicina alkalmazásának jogszabályi környezete Magyarországon*, 8(4) Glossa Iuridica 238–240 (2022).

43 Statistics 2022, cit. at 31, 10

44 Statistics 2023 I, cit. at 34, 10.

45 Á. Dósa, P. Hanti, Z. Kovácsy (eds.) *Nagykommentár az egészségügyről szóló 1997. évi CLIV. törvényhez* (2023), Commentaries to Article 106/A-106/C.

people handled 518,378 e-administrative cases on the telephone by using this type of identification[46]; in the first half of 2023, this number was 204,166[47].

3.2. User Service and Work Support

Since late 2021, several AI-supported services have helped streamline workflows and aim to relieve public servants in tasks related to general information sharing or database-related affairs when the procedural steps are suitable for digitalisation[48].

(i) Communication and information sharing

The *voice production service* converts electronically available text into voice-based speech by machine and the *voice transcription service* converts live speech and digitally recorded speech in archived media materials into written text. The user can check the transcribed text and make changes to it, and it is considered a statement if it has been approved by the client. The service provider will send a copy of the transcribed text approved by the customer to the client's storage location in the event of such a request[49].

The *communication assistant* is a software solution that can conduct a conversation similar to a dialogue between two people and interactive communication with the participation of a real person in a collaborative way, or automatically, without the intervention of a human being. The assistant can develop through a machine self-learning process. The body providing electronic administration can also use it when employing a voice connection, video connection, or written communication. Therefore, on websites through which e-administration or information about it is available, the icon of the assistant appears (usually in the form of a brown haired girl) with the text '*Segíthetek*?' (May I help you?). Also, to relieve the burden on the Government Help Line (1818), the AI-supported *ChatRobot* was introduced in May 2021. The chatbot successfully answered 38.5% of the questions asked on this channel (600,366 queries), while in 59.5% of cases, it facilitated the tasks of public servants by providing answer tips. Only 2% of the

[46] Statistics 2022, cit. at 31, 9.
[47] Statistics 2023 I, cit. at 34, 9.
[48] Entered into force on 23 December 2021 by Gov. Decree 717/2021. (XII. 20.) Article 20(11); Gov. Decree 451/2016. (XII. 19.) on detailed rules of electronic administration, Article 135/I.
[49] GREATS executive decree, Article 134/J-134/K.

remaining questions required human intervention to provide full answers.[50]

(ii) AI-supported terminals

Touch-screen devices were launched in January 2022, within the framework of the *KIOSZK project* (*mesterséges intelligencia asszisztens - MIA*), to assist customers easily and quickly manage their administrative affairs electronically. These devices are placed in different frequently visited office premises, post offices, and Digital Welfare Program Points[51]. In the first half of 2022, they were used in test mode. The installation of the devices and their large-scale use kicked off in the second half of 2022. By the end of 2022, 338 devices were operating across the country, and they were used in 7,621 cases for handling administrative authority proceedings online, saving a personal visit to the official premises of the authorities.

As of 2023, thirteen types of administrative proceedings can be initiated on the MIA terminals: application for a certificate of good conduct, driver's licence replacement, address notification, birth certificate, marriage certificate, registered partnership application certificate, withdrawal of a vehicle, extension of the temporary withdrawal of a vehicle by an individual, replacement of an identity card, and verification of document validity. A total of 14,338 cases were submitted at the terminals in 2023. The most popular case types were certificate of good conduct applications, birth certificate requests, and verification of document validity[52].

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[50] The National Food Chain Safety Office (*Nébih*) also has a charbot, called Nébo that answers the questions of users visiting the office on the Facebook Messenger interface 24/7 and also receives food chain safety announcements. This service has been running since 1 July 2020. Press announcement: *Július 1-től Nébo segíti a Nébih ügyfélszolgálati munkáját. 2020. július 1*, at https://portal.nebih.gov.hu/-/julius-1-tol-nebo-segiti-a-nebih-ugyfelszolgalati-munkajat# (visited 20 May 2024).

[51] Digital Welfare Program Points are locations where citizens can access digital technologies and the internet, as well as participate in various digital skill development programs and courses. They have been set up to help reduce the digital divide and provide everyone with the opportunity to benefit from the digital world.

[52] *2023. éves monitoring jelentés. Belügyminisztérium – Informatikai Helyettes Államtitkárság Rendvédelmi Informatikai és Elektronikus Rendszerek Működtetéséért és Fejlesztéséért Felelős Főosztály, Szolgáltatásmenedzsment Osztály* [BM Report], at https://www.nyilvantarto.hu/hu/statisztikak (visited 20 May 2024) 9-10.

3.3. Automated Decision-making

Complete automation, where the entire administrative authority process can be carried out without human intervention, is still in its infancy. However, the current government aim is to achieve a 'data-driven service state,' making the development of automatic decision-making functions a priority[53].

Automated decision-making as a type of administrative procedure has been part of Hungarian administrative practice since 2016-2017[54], and the regulatory environment underwent significant changes in July 2023[55]. Automated decision-making can be initiated by both clients and the authority[56]. Users can learn about the methodology and essential procedural rules as they are published on the electronic administration interface. Not all type of cases are suitable for automation; currently, most are authority proceedings that rely on data from an authentic database affecting the population to the greatest extent (e.g. personal data and address register, estate register, vehicle register) maintained under the responsibility of the Minister of Interior[57]. The Ministry of the Interior has given the name 'simplification project' to the innovations that make automation possible in certain very common types of cases when the in-person visit to the authority is as avoidable as human intervention by public servants. Thus, from February 1, 2021, within the framework of the simplification project, certain administration processes related to birth, marriage and death became easier, and the electronic application for a driver's licence was implemented. In 2023, 254,770 people applied electronically for first issuance, category extension, or extension of their driver's licence. In the case of a name change due to marriage, 3,296 people requested to officially change their identity card, 2,091 people applied for a driver's licence, and 3,504 people requested a

[53] AI Strategy, cit. at 2, 38.

[54] First, it was introduced by GREATS from 1 January 2016, then, a modification introduced it to code of the general proceeding a year later, the Ket. See details through a type of proceedings: E. Rító & Z. Czékmann, *Okos megoldás a közlekedésszervezésben - avagy az automatikus döntéshozatali eljárás egy példán keresztül*, 13(2) Miskolci Jogi Szemle 115 (2018).

[55] Act LX of 2023 on the amendment of certain laws related to the organisation of gambling and electronic administration and to strengthen the coherence of the legal system, Article 32.

[56] GREATS, commentaries to Article 11.

[57] GREATS, Article 11 (4)–(5); Digital State Act, Article 21 (3)–(4).

passport. In these cases, the new document (decision) was made automatically[58].

Absolute automatic decision-making occurs if the request was submitted online by the client and the decision does not require consideration, meaning a legal decision can be made by applying a cogent provision. It is also necessary for the data required to manage the case to be either available or obtained through automatic information transfer. In such cases, the procedural actions required during the process are carried out without human intervention, including the decision concluding the procedure, which is announced along with the fact that it was made through an automatic process[59].

On the other hand, *relative automated decision-making* means that the claim is not submitted online, but the circumstances of the case are clear, requiring no deliberation, and there are no conflicting user interests[60]. If the legislation permits it, such cases can be handled in an automated manner, although human intervention is typically required at the outset to initiate the process[61]. Therefore, it substantially contributes to facilitating the workflow even when human intervention is still required[62].

Although current legal practice does not yet rely on AI for automated decision-making, and the number of cases where the decision is made through automated processes is relatively low, several worrisome issues have already been raised regarding the simplicity and lack of individualisation implicit in such decisions. When algorithmic data processing leads to a negative outcome for the applicant, the absence of necessary information, whether related to the factual background of the case or the lack of clear guidance on available legal remedies, creates an information gap for them. While individuals have the legal right to seek judicial review of these decisions, the effectiveness of such reviews is questionable. First, the applicant's lack of information often renders it difficult to exercise their right to a legal remedy. Second, tribunals are frequently unable to assess the legality of the public

[58] BM Report 2023, cit. at 52, 13.
[59] GREATS, Article 11; Digital State Act, Article 21.
[60] Act CL of 2016 on general administrative proceedings (Ákr.), Article 40.
[61] E. Csatlós, *Az ügyfél és a hatósági döntéshozatal a digitalizáció korában*, 13(1) Pro Futuro 10–18 (2023).
[62] Gov. Decree 310/2023 (VII. 14.) Article 4; GREATS executive decree Article 134/R-134/S (preceding July 22, 2023).

administration's automated decisions due to similar informational deficiencies. As a result, automated decisions represent unfair procedures that are ill-suited for judicial review—not because of their automated nature, but due to the lack of proper individualisation in the decision-making process[63].

3.4. Crime Prevention and National Defence

Law enforcement, as a specific part of public administration, follows distinct practices and rules to maintain law and order in a state. Crime prevention is a crucial aspect of its activities, and the exploitation of available information plays a vital role. The use of AI in this field is, however, still in its infancy.

An essential part of integrated law enforcement is the collection of relevant information that can be obtained from civil and international databases. This filter-research work starts from the initial phase of the investigation, but by definition accompanies almost the entire detection and investigation process. There are many technologies in use by modern states; in Hungary, facial recognition system is used by default. Software generates a list of potential candidates (candidate list) from the photos available in the system, displaying the ones most similar to the searched face image. Subsequently, two independent face image analysts, unaware of each other's activities, individually select potential hits based on their professional judgement from the candidate list. The marked images are then forwarded to the requesting police agency[64].

The Robotzsaru (Robocop) program, initially introduced in 2001[65], is used to tackle information warfare. Later, Robotzsaru2000

[63] Based on the rapid evaluation of the research conducted by Erzsébet Csatlós under research permit no. 2024.El.XI.F.13/9. in the casefiles (including the automated administrative decision, the legal remedy claim and the judicial decision on the review) of the administrative division of the Szeged Court, Hungary. See also E. Csatlós, *A hatóság indokolási kötelezettségéről*, 17(1) Közjogi Szemle 41–43 (2024).

[64] Z. Fantoly, *Mesterséges intelligencia a büntetőeljárás nyomozási szakaszában*, *Acta* Universitatis Szegediensis: Forum: acta juridica et politica 51 (2022).

[65] E. Elekes, *Szervezetfejlesztés és vezetési funkciók összefüggéseinek vizsgálata egy konkrét államigazgatási szervnél* (PhD értekezés, Debreceni Egyetem, Gazdálkodástudományi Kar, Ihrig Károly Gazdálkodás és Szervezéstudományok Doktori Iskola 2014) 53, at https://dea.lib.unideb.hu/server/api/core/bitstreams/4480a0d6-21e9-42de-8eac-c36c370283f5/content (visited 20 May 2024).

(Robocop2000) became an integrated administration- and case-processing system allowing the storage of – and access to – all case documents in order to contribute to the efficient performance of police work, especially crime analysis tasks execution. It was the Netzsaru (Netcop) system that ensured the national availability of persons, events, objects and other data related to the case included in the criminal files recorded in the Robotzsaru system[66]. It could be accessed from any part of the country and it was the first national information system harmonised with the GDPR and expanded with photos, fingerprints and DNA fingerprints[67]. RobotzsaruNEO (RobocopNEO) places the user functions of the previous system on a new logical and physical architecture and adds new user and administration functions[68]. It is a current aim to incorporate AI into this system to support the work of investigative authorities to detect criminal groups. Furthermore, AI can support scene of the crime investigation in the digitalisation of traces, the preparation of the site inspection report, and the analysis of video and image recordings (such as the creation of a virtual space). In the future, given the appropriate legislative amendments, video analysis of witness interviews and the questioning of suspects could be carried out with the help of AI to infer the behavioural pattern (emotional state) of the interrogated person. In addition, minutes could be prepared based on automatic voice transcription, as well as the transcription of voice-based evidence, analysis of video recordings, (e.g. facial and movement analysis), and mapping of a given person's environment based on cell information[69].

4. Legal Aspects and Challenges to Reliance on AI

Just as there is no specific legislation on AI, neither are there any specific legal guarantees regarding AI use.

As for administrative proceedings, Act CL of 2016 on general administrative proceedings (Ákr.) co-exists with the GREATS (and the later Digital State Act) for the electronic aspects of the process.

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[66] F. Pilisi, "*Bűnügyi adatgyűjtés, különös tekintettel a raszternyomozásra*, 1(2) Büntetőjogi Szemle 43 (2012).

[67] J. Csorba, *Információ és állam* (2004) 230.

[68] Á. Sütő Ákos, *Robotzsaru (NEO) Integrált ügyviteli és ügyfeldolgozó rendszer információvédelmi lehetőségei*, 9(2) Hadtudományi Szemle 359–361 (2016).

[69] L. Hertelendi & Z. Hornyik, *Mesterséges intelligencia a köz szolgálatában. Interjú Hajzer Károly informatikai helyettes államtitkárral*, 10(1) Belügyi Szemle 212 (2022).

The basic principles, the outline of the course of proceedings and the procedural steps, rights and responsibilities of all parties and general legal remedy issues are covered by the Ákr. The specific aspects of e-administration, such as the principles of e-proceedings, rights and obligations of the parties, details of contacting the authority in an e-way, the issue of operational failure, the regulation on the bodies providing e-governance service are all covered by the GREATS.

In the case of automated decision-making, the Ákr. excludes the possibility of internal (administrative) legal remedies. Yet, within five days, the client has the right to submit request to follow the 'traditional way of proceedings'[70]. Furthermore, according to the general rules, decisions by public authorities are subject to judicial review[71].

The Ákr. obliges the competent authority to ensure the protection of personal data and qualified data and declare targeted and frugal data management[72]. However, the GDPR and the Act CXII of 2011 on the right to information self-determination and freedom of information aim to stand as background legislation with details on data management; certainly, in the event of a potential conflict of norms, the GDPR would prevail as an EU regulation[73].

Data sets with a potential multiplying effect have not yet fully realised their capacity to stimulate economic revitalisation. The *startup ecosystem* has only begun to develop recently, and Hungarian AI startups are not dominant in the world market. There is also room for improvement in terms of business culture. Both individuals and businesses lack the courage to embrace innovation and experimentation, which is a critical element in the adoption of new technologies[74].

In terms of new technologies and their accessibility, Fantoly highlights budget-related issues. If implementing programs is challenging and time-consuming, it not only fails to assist but may hinder the work of investigative authorities. For instance, until laptops are equipped with the latest software, system

[70] Ákr. Article 42.
[71] Ákr. Article 114.
[72] Ákr. Article 27.
[73] J. Wagner & A. Benecke, *National Legislation within the Framework of the GDPR Limits and Opportunities of Member State Data Protection Law*, 2(3) Eur. Data Protection L. Rev. 353, 358–61 (2016).
[74] AI Strategy, cit. at 2, 16.

interconnections are developed, and control of internet-based communications is established, discussing the effectiveness of significant Big Data analysis tasks or the efficiency of analysis and evaluation work remains premature[75].

Despite the presence of digitally advanced businesses, *paper-based operations are still primary* in many places, highlighting the need for enhancement in digital competencies. Hungary's *digital competence as a society* significantly lags behind the European average, requiring special efforts, particularly in connection with the introduction of AI in various sectors[76].

There is a looming danger that Hungary may become too dependent on global service providers, lacking the platform technology to confidently compete in future fields. It is important to consider that the user base for the Hungarian language is relatively narrow, making global markets less interested in high-quality Hungarian language processing. This could weaken the use of Hungarian in the digital age. Additionally, there is a risk of falling behind in global competition, primarily due to more intensive or efficient AI developments in offshore and nearshore countries, both in civil and defence technologies, compared to domestic efforts[77].

Cybersecurity has already become an important issue for the public administration after the millennium, and especially after 2010, when the e-Government and the municipal e-services began to evolve rapidly. Thus, cybersecurity became part of the public order and safety policies of the Hungarian administrative system[78]. In 2013, an act was adopted on the cybersecurity of the central and

[75] Z. Fantoly, *Raszternyomozás és mesterséges intelligencia*, 13(1) Forum: Acta Juridica et Politica 30 (2023); see also B. Veszprémi, "*Az elektronikus ügyintézés terjedésének gátjai az állami feladatellátásban*", 11(1) Új Magyar Közigazgatás 73 (2018).

[76] The smart city projects aim to improve the attractiveness and liability of small settlements with digital and smart solutions. See G. Sallai (ed.), *Az okos város (smart city)* (2018); B. Budai Balázs, *Smart governance, avagy az okos (ön)kormányzás alapjai* (2018) 23–30.

[77] AI Strategy, cit. at 2, 24. See also Digital Decade Country Report 2023 Hungary, available at https://digital-strategy.ec.europa.eu/en/library/country-reports-digital-decade-report-2023 (visited 20 May 2024).

[78] I. Hoffmann, *Cybersecurity of the Hungarian Municipal Administration: Challenges of a Fragmented System*, in K. Chałubińska-Jentkiewicz & I. Hoffman (eds.), *The Role of Cybersecurity in the Public Sphere – The European Dimension* (2022) 219.

local governments[79]. It has a centrally supervised system led by the Ministry of the Interior, and the central body of cybersecurity issues is one of the national secret service agencies. As for the weaknesses in the system, or the Achilles heels, as Hoffmann describes them, the fragmented spatial and sectoral structure of the e-administration can be interpreted as a potential cybersecurity threat. First, spatial fragmentation refers to the administrative structure[80]. Second, there has been no uniform identifier of people since the 1990s. However, this fragmentation has some advantages as well. Because these systems are separated, malevolent activities face difficulties: only separated systems could be attacked at once[81].

Overall, the examples introduced above seem to indicate the organic yet fragmented and ad-hoc nature of upgrading e-governance in Hungary. In these developments, AI seems to play an important but not central role.

5. Technological and Educational Aspects of AI Use

AI may support carrying out e-governance services with greater effectiveness, as long as they are based on cutting-edge technologies of the highest standards. Otherwise, the state might fail to serve its clients' (practically, its nationals') interests. The dire need for the highest quality AI technology to back e-governance services seems to be fulfilled in Hungary. The IT support and R+F activities backing numerous services – including text-to-speech, speech-to-text and chatbot services, the MIA terminals as well as those under the Digital State Act – are developed, deployed, and supported by Idomsoft Zrt. This private limited company was acquired by the state in 2012.

[79] Act L of 2013 on the electronic information security of state and local government bodies.

[80] Before the reforms of the second decade of the millennium, Hungary had a highly decentralised public administrative system. However, recent centralisation has shifted many local tasks to central authorities. Public services like education, health care, and social care, previously managed by municipalities, are now mainly run by central and territorial institutions. See I. Hoffmann, *Administrative Law in the Time of Corona(virus): Resilience and Trust-building*, 6(1) Pub. Gov., Admin. & Fin. L. Rev. 47 (2021).

[81] Hoffmann, cit. at 81, 220.

No publicly available document clarifies the exact AI technology that this company uses. The available descriptions[82], press releases[83] or service descriptions[84] suggest that they develop the software they use internally. Indeed, some of their developments gained publicity and were commended by the European Commission.[85]

As the majority of AI-supported services necessitate human contributions in decision-making, public servants need specific education. They are legally obliged to participate in advanced studies related to their job. The educational programs are provided by *Ludovika University of Public Service* in Budapest[86]. The educational programs aim to keep up with needs, so, as part of the education portfolio of 2023, there are programs to expand digital skills, with one specifically focusing on the introduction to the world of AI and cybersecurity, and the e-public administration course forms part of the traditional subjects. The AI Module is available to students enrolled in the general programme in political sciences (state studies) as well as to cybersecurity MSc students[87].

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[82] On the KIOSZK project, see *Mesterséges intelligenciával támogatott ügyintézési pont (KIOSK) kiterjesztése a kormányhivatalokra, illetve más külső ügyintézési helyszínekre*, https://kifu.gov.hu/projekt/mesterseges-intelligenciaval-tamogatott-ugyintezesi-pont-kiosk-kiterjesztese-a-kormanyhivatalokra-illetve-mas-kulso-ugyintezesi-helyszinekre/ (visited 4 July 2024).

[83] E.g. *Egyre hatékonyabban működik a mesterséges intelligencia az ügyintézésben*, NISZ Zrt., (26 January 2023), at https://nisz.hu/sajtoszoba/egyre-hatekonyabban-mukodik-a-mesterseges-intellig-d158 (visited 4 July 2024).

[84] E.g. *Csatlakozási és szolgáltatási szabályzat* (25 August 2022), at https://idomsoft.hu/wp-content/uploads/mia_csatlakozasi_szolgaltatasi_szabalyzat.pdf (visited 4 July 2024).

[85] Idomsoft's 'Anomaly detection in e-government administration' solution was selected for a case study. See L. Tangi, M. Combetto, J.M. Bosch, A.P. Rodriguez Müller, *Artificial Intelligence for Interoperability in the European Public Sector: an exploratory study* (2023), doi:10.2760/633646, JRC134713, 93.

[86] Act CXCIX of 2011 on civil servants, Article 80; Gov. decree 273/2012. (IX. 28.) on training of civil servants; see P. Princzinger & L. Kisfaludy, *A „jó állam" alapköve: a közszolgálati továbbképzés rendszere*, 3(1) Pro Publico Bono – Magyar Közigazgatás 139–147 (2015).

[87] *Mesterséges Intelligencia Modul a jövő közigazgatási szakembereinek* (12 February 2024), at https://www.uni-nke.hu/hirek/2024/02/12/mesterseges-intelligencia-modul-a-jovo-kozigazgatasi-szakembereinek (visited 4 July 2024).

6. AI in Legal Literature

The focus of Hungarian researchers is predominantly on *exploring assumptions and potential areas of application, often exploring foreign states' practices*[88] and their potential applicability in our country[89], rather than addressing the current state of AI in Hungarian legal practice. This is infrequent and often presented by practitioners based on their experiences in a less scholarly manner[90]. This is mainly due to the technology not being widespread in practice.

Discussion on simplifying and streamlining workflows in traditional public administration primarily revolves around identifying potential areas for AI application[91], considering the phenomenon as a part of the historical evolution of the rationalisation of the work process[92], expressing doubts on the context of the centralised nature of using AI and local government autonomy[93], or exploring the potential benefits of using smart contracts and blockchain technology in public administration, for instance[94]. Automated decision-making in public administration

[88] G. Nyáry, *Kiber geopolitika - Mesterséges Intelligencia alkalmazások az államigazgatás külpolitikai alrendszereiben*, 13(1) Új Magyar Közigazgatás 31–38 (2020).

[89] Á. Kalmár, *Innovációs javaslatok a határrendészeti szolgálati ág részére a tömeges méretű migráció kezelésében*, 1(1) Rendőrségi Tanulmányok 80–89 (2018); D. Ambrózy et alii, *Drónok alkalmazása a rendvédelemben, különös tekintettel a mesterséges intelligencia-módszerekre a dróntechnológia területén*, 9(2) Rendvédelem 35–42 (2022).

[90] E.g. physicist N. Fenyvesi, *Robotszoftverek alkalmazása a Magyar Államigazgatásban*, 13(3) Új Magyar Közigazgatás 30–36 (2020).

[91] P. Darák, *A mesterséges intelligencia a közszférában*, 13(4) Új Magyar Közigazgatás 58–59 (2020).

[92] A. Torma András & B. Szabó, *Egy közigazgatási sci-fi, vagy a jövő valósága? Úton 2030 felé. Hipotézisek a holnap közigazgatási hatósági eljárása általános szabályainak gyakorlatához*, 2(2) KözigazgatásTudomány 118–137 (2022).

[93] I. Hoffman & A. Bencsik, *New Ways of Providing Public Services: Platforms of Service Provision and the Role of Artificial Intelligence: In the Light of the Development of the Hungarian Public Administration*, in S. Benković, A. Labus, M. Milosavljević (eds.), *Digital Transformation of the Financial Industry, Contributions to Finance and Accounting* (2023) 181.

[94] Z. Czékmann, L. Kovács, E. Czibrik, *Okos szerződések, blokklánc-technológia és egy gondolatkísérlet mindezek alkalmazására a közigazgatásban*, 13(1) Pro Futuro 13–14 (2023).

gained limited attention, with only a few authors exploring this area[95].

Futó has extensively studied the application of AI in public administration, categorising it into two groups: rule-based and machine learning. An essential consideration is how decisions are justified, particularly when employing machine learning algorithms, which operate statistically, making predictions based on data without explicit programming. However, the lack of transparency in their results, often referred to as a "black box," poses challenges. In contrast, rule-based expert systems simulate human decision-making by solving complex problems through inference, employing "if, then" conclusions[96]. Authority procedures, bound by normative rules, can benefit from well-maintained knowledge bases that align with legislative changes and legal practices. A properly written program, considering legislation and known facts, aids the authority in decision-making by generating patterns based on entered data[97].

Futó's research emphasises the inference chain-based decision-making, which functions more like a template, serving as a decision support system for administrators. While decision-making through such systems can enhance uniformity in case law, challenges arise regarding sensitivity in handling complex discretionary powers and fairness. The future raises questions about the system's ability to handle intricate cases, balancing the objective application of law with the need to address individual problems. Developing citizens' digital competencies is crucial as authority procedures evolve, and individuals must understand legal "if, then" statements and the reasons behind onerous decisions. Ensuring access to knowledgeable legal assistance and thorough justifications is vital, especially given data protection concerns and the responsibilities associated with the digital

[95] E. Ritó & Z. Czékmann, cit. at 54, 104–118; Z. Czékmann, G. Cseh-Zelina, E. Ritó, *Az automatikus döntéshozatal helye és szerepe a hatósági eljárásban*, 2(2) KözigazgatásTudomány 35–47 (2022); E. Csatlós, cit. at 61, 10–18.

[96] I. Futó, *Mesterséges intelligencia: de miért nincsenek szakértői rendszerek a magyar közigazgatásban?*, 13(4) Új Magyar Közigazgatás 35 (2020).

[97] I. Futó, *Mesterséges intelligencia-eszközök – logikai következtetésen alapuló szakértő rendszerek – alkalmazása a közigazgatásban, hazai lehetőségek* 49(7-8) Vezetéstudomány/Budapest Management Review 43–47 (2018).

management of personal data, emphasising the need for legislators to refine the legal remedy framework[98].

In criminal matters, the investigative authorities have a pivotal role, so simplification and work-relief are also worth mentioning here. There is an ongoing discussion about decision-making and its connection to specific fundamental rights[99]. It has been remarked that the application of algorithms within criminal justice is not inherently evidential; technology alone does not determine their validity[100]. However, AI, while evaluating input data, identifies cases where there might be grounds for postponing proceedings, considering factors such as the nature of the offence or the personal circumstances of the perpetrator. In this process, assistance can be derived from the emerging field of predictive policing, where AI-based software could be introduced by incorporating modern technical solutions in the work of investigative authorities[101]. While the theoretical discussion on the potential responsibility of public administration for AI use is ongoing, the current focus is mainly on issues such as sharing wrong information[102]. In criminal law, the predominant topic centres around criminal liability associated with self-driving vehicles[103].

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[98] FL, Article VI (2); Act CXII of 2011 on the right to information self-determination and freedom of information, Article 20; see *A Nemzeti Adatvédelmi és Információszabadság Hatóság ajánlása az előzetes tájékoztatás adatvédelmi követelményeiről* (2015), at https://naih.hu/files/tajekoztato-ajanlas-v-2015-10-09.pdf (visited 20 May 2024) 4–13; B. Hohmann, *A mesterséges intelligencia közigazgatási hatósági eljárásban való alkalmazhatósága a tisztességes eljáráshoz való jog tükrében*, in B. Török & Z. Ződi (eds.), *A mesterséges intelligencia szabályozási kihívásai: Tanulmányok a mesterséges intelligencia és a jog határterületeiről* (2021) 413; E. Csatlós, cit. at 61, 18–21.

[99] K. Karsai, *Algorithmic Decisions Within the Criminal Justice Pipeline and Human Rights*, in A. Sözüer (ed.), *9. Uluslararası Suç ve Ceza Film Festivali "Sanal Dünyada Adalet": Tebliğler* (2022) 101–126.

[100] K. Karsai, *Algorithmic Decisions Within the Criminal Justice Ecosystem and their Problem Matrix*, 92(1) Int'l Rev. Penal L. 13 (2021).

[101] Z. Fantoly & C. Herke, *A mesterséges intelligencia a hatékonyabb büntetőeljárás szolgálatában*, 24(4) Magyar Jog 225, 226, 228 (2023); C. Herke, *Mesterséges intelligencia a büntetőjogi döntéshozatalban*, 78(4) Jogtudományi Közlöny 170–175 (2023).

[102] T. Bicskei, *A mesterséges intelligencia közigazgatásban való felhasználásával okozott kár*, 3(1) KözigazgatásTudomány 99–114 (2023).

[103] K. Karsai, B. Miskolczi, M. Nogel, "*Hungarian Report on Traditional Criminal Law Categories and AI*, 94(1) *Rev. int. dr. pénal* 263 (2023).

The development and utilisation of specific state registers and new tools, especially drones, to enhance the execution of specific tasks instead of relying on the human workforce, is a recurring theme in legal literature concerning disaster management[104], investigations[105], and state defence[106].

7. AI in Practice: Problems So Far

Public administration plays a crucial role in ensuring that private actors operate within the bounds of the law. Often the illegal use of AI is revealed in their exercise of supervisory authority.

AI is extensively employed in the private sector, leveraging various types of personal data. The *ex officio* procedures of the *Hungarian National Authority for Data Protection and Freedom of Information* (NAIH) as a data protection authority play a vital role in uncovering potential misuse/dangerous use of AI, or rather the lack of ensuring the basic right related to data management in most cases. The legal remedy against the decision of the NAIH is the possibility of brining an administrative claim before the *Fővárosi Törvényszék* (Municipal Tribunal). This court has exclusive competence[107].

Complaints raised against reliance on AI are not quantifiable with any precision. However, a few noteworthy cases have emerged, shedding light on concerns. While they might not be termed 'leading cases', it could simply be a matter of time before such cases gain prominence and set precedents in the legal landscape.

7.1. No AI, No Legal Guarantees for Individuals?

It is common practice to record calls when people speak to service providers, with only a brief automated notice informing them of this. In *Service Provider v. NAIH*, the Municipal Court had

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[104] L. Egyed, *Drónok használatának lehetőségei a katasztrófavédelemnél, különös tekintettel a tűzvédelmi prevencióra és a kárelhárításra*, 8(3) Védelem Tudomány 124–141 (2023).

[105] A. Déri, *Drónok alkalmazhatóságának lehetőségei a rendőrségen* 11(2) Rendvédelem 25–26 (2022).

[106] L. Gajdács & G. Major, *Katonai célú drónok fejlesztése a jelenkorban, a jövőt vizionálva*, in L. Földi (ed.), *Szemelvények a katonai műszaki tudományok eredményeiből III.* (2022) 101–120.

[107] Act I of 2018 on the administrative court procedure Article 3 (a) aa).

to rule on the illegal use of recorded customer service calls and made a declaration on the applicability of the GDPR for the practice[108].

The recorded material from customer service calls is analysed automatically, taking into account the emotional states of both the calling customer and the customer service employee, along with other characteristics of the conversation. The results of this AI analysis are then used to make informed decisions on which customers require a callback. At the beginning of the customer service calls, no information was provided to the effect that software was being used or data being processed for voice analytics purposes because the options for verbal information were said to be limited, and the technical features excluded the possibility of raising objections other than by disconnecting the call. Also, the service provider denied the applicability of the GDPR to the present case, claiming that AI was not used and rejecting the accusation of automated decision-making by arguing that the analysis results were obtained through human intervention and interpretation.

The NAIH determined that both actors in the call – customer service employees and third parties – can be identified in the examined system. The NAIH referred to the judgement C-582/14 of the Court of Justice of the European Union[109] and established that the emotional state recognised by the software and the data associated with the caller ID and phone number constitute personal data linked to an individual. Consequently, the GDPR applies to data management using the software.

Relying on the information placed on the website of the company developing the software and the Hungarian website of the service provider, which stated that the software is capable of automatically evaluating received and begun calls based on predetermined rules, the NAIH was convinced that the software used for the automatic processing of personal data via AI, making Article 21 GDPR applicable to the data processing in question.

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[108] NAIH-5161/2021, available at https://www.naih.hu/hatarozatok-vegzesek?download=517:mesterseges-intelligencia-alkalmazasanak-adatvedelmi-kerdesei (visited 20 May 2024); Fővárosi Törvényszék 105.K.701.428/2022/13, available in the database at https://birosag.hu/ugyfeleknek/birosagi-hatarozatok-gyujtemenye (visited 20 May 2024).

[109] Case C-582/14 *Patrick Breyer v Bundesrepublik Deutschland* [2016] ECLI:EU:C:2016:779, para 42–49.

Additionally, Article 4(4) GDPR on profiling must also be applied, as dissatisfied customers are categorised for recall based on keywords and emotions.

In examining the right to be informed and the right to object, it was found that, with voice analysis and the automatic evaluation of calls, as well as the subsequent potential for a callback, data subjects did not receive any information at the beginning of the conversation. The service provider, under Article 13 GDPR, failed to provide adequate information, apart from the legal basis and did not comply with Article 13 GDPR, offering incomplete indications of the purpose. The complete absence of the right to object constitutes a breach of Article 21 GDPR, rendering consent unacceptable as a legal basis.

7.2. No Consent, No Service: The Case of Forced Consent in Two Typical Situations

Individuals may find themselves in situations where they need to use a service or wish to use it, but they are required to provide their data without clarity on its intended use. The use of voice recording, mandated by legal obligations in the case of complaints and otherwise based on the customer's decision, is an integral aspect of telephone customer service. However, it poses a significant detriment to the interests of telephone customer service if it is not made known to those who do not wish to accept all data processing related to it, details of which remain completely unknown.

In the *NAIH v. Financial Institution*[110], the investigation focused on whether the financial institution automatically analysed recorded customer service calls and informed the individuals involved. The website mentioned recording and analysis only briefly. The call analysis aimed to improve call selection for employees, but the characteristics and results of the evaluation were not disclosed to customers. The institution argued that the data could not be linked to specific individuals, claiming no profiling was involved. However, NAIH stated that using such data without customers' knowledge and consent violated GDPR Article 6 (4). The analysis also included employee voices for

[110] Fővárosi Törvényszék 105.K.701.428/2022/13/alphat in case NAIH-7350/2021, at https://www.naih.hu/hatarozatok-vegzesek/file/517-mesterseges-intelligencia-alkalmazasanak-adatvedelmi-kerdesei (visited 20 May 2024).

performance pay, raising concerns about their ability to protest due to their employment status. NAIH stressed the need for stronger guarantees and careful planning in monitoring employees, highlighting the institution's failure to address legal and ethical issues. According to GDPR Article 24(1), the institution should have ensured maximum protection of the stakeholders' rights and freedoms, which it did not.

In the case *NAIH v. Festival Organiser*[111] the authority investigated the legality of the data management practices implemented during the entry practice at events run by the organiser.

Criticism has been directed at the entry procedure, where guests' ID cards were scanned. Moreover, concerns have been raised about inadequate information for individuals regarding the circumstances of data management, including the purpose and duration of ID card copying and its intended use.

During registration at the venue for events organised by the data controller, the data subject was required to provide proof of identity using an official document with a photo. The data controller read, recorded, stored, and managed the data extracted from the personal identification document, while also making video and audio recordings of the data subject, which were similarly recorded, stored, and managed. The organiser retained the right to invalidate the wristband and deny entry to the event if the individual did not consent to data processing. According to the organiser, the individuals had a real choice of whether to subject themselves to the entry exercise or not as it was their choice to buy a ticket and participate in the festival. As buying a ticket is not an obligation, they have their free will. Such a strict system was claimed to be necessary to maintain the security of the people, and it could also be potentially useful in collaboration with the local police or perhaps with secret service agencies. The organiser clarified that a specific algorithm is used for screening individuals who may pose a threat. As for personal economic interest, the aim was the personalisation of the tickets to avoid abuse.

In the view of the NAIH, consent of the individual cannot be considered a suitable legal basis in cases where, without giving consent, another independent data management or service used

[111] Case NAIH/2019/55/5, at https://www.naih.hu/hatarozatok-vegzesek/file/165-a-sziget-zrt-altal-szervezett-rendezvenyeken-folytatott-beleptetessel-osszefuggo-adatkezelesek (visited 20 May 2024).

with payment cannot be enforced. According to the Authority's point of view, the data subject *had no real choice* during the data processing related to the entry and also, the huge amount of personal data including information on the visitors' country of origin, nationality, and gender is not required and unnecessary for reducing abuse of the tickets. In sum, this practice was against the principle of data saving and targeted data management. Furthermore, the interests mentioned regard the public interest, the enforcement of which is not the duty of the organiser.

7.3. Market Surveillance or Lifesaving Intervention?

It is acknowledged that AI is extensively utilised in various aspects of healthcare, and it has its risk concerns[112]. However, there is a specific responsibility to regulate medical equipment accessible to the general public, exposing ordinary consumers to the risk of misplaced trust.

In response, the National Pharmaceutical and Food Health Institute (OGYÉI) took measures to suspend the use and advertising of medical devices. Additionally, the Institute prohibited the use of these devices, that lacked appropriate medical professional characteristics, addressing concerns related to their illegal distribution. During a product presentation, a blood pressure metre transmitted signals to a computer program, allowing real-time observation of oscillometric curves on the screen. Afterwards, the program's algorithm analysed the signals to calculate blood pressure and arterial function parameters, which were displayed in the 'results' menu; the user's manual recommended using the average of three consecutive measurements for accurate cardiovascular prognosis assessment. The authority's standpoint was that presenting all these parameters and measurements results in curves and tables *beyond the expected knowledge, understanding, and evaluation capabilities of laypersons*, even with training provided by the manufacturer. Moreover, the restriction of use requires a decision based on knowledge and consideration of the patient's previous medical history, which

[112] T. Davenport & R. Kalakota, *The potential for artificial intelligence in healthcare*, 6(2) Future Health J. 94–98 (2019); M. Zorkóczy, *A mesterséges intelligencia egészségügyi jogi és etikai dimenziói*, 25 *MTA Law Working Papers* (2021), at https://jog.tk.hu/mtalwp/a-mesterseges-intelligencia-egeszsegugyi-jogi-es-etikai-dimenzioi?download=pdf (visited 20 May 2024).

cannot be anticipated by a lay user[113]. Therefore, the AI-based evaluation of medical data is not suitable for everyday use by ordinary people without proper medical surveillance; a medical device cannot replace a physician.

[113] Fővárosi Törvényszék 109.K.702.287/2021/16/h, at ttps://birosag.hu/ugyfeleknek/birosagi-hatarozatok-gyujtemenye (visited 20 May 2024).

THE USE OF AUTOMATED DECISION-MAKING SYSTEMS BY THE GOVERNMENT IN LATVIA

*Edvins Danovskis**

Abstract

The article provides an overview of the regulation and use of automated decision-making systems by the government in Latvia when adopting binding administrative decisions for private individuals. Automated decision-making in this context is defined as a process where an automated information system generates an administrative decision solely using data collected from information systems without human intervention. The article examines the reasons why automated decision-making in Latvia is permitted only in cases specified by law and why, even in those cases, the actual implementation of automated decision-making is lagging.

TABLE OF CONTENTS

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1. Introduction

In general, humans should not be governed by machines. Although legal provisions can be understood as algorithms, it is well known that in most cases a much more complex approach is required to achieve justice when the law is applied. However, there are instances where legal provisions are clear and straightforward, and all relevant facts have already been collected in information systems, thus allowing for the automatic generation of a decision issued by the government, which creates legal consequences for an individual. Therefore, in some, if not many instances, the use of automated decision-making systems is justified by considerations of effectiveness.

In this article, automated decision-making is understood as a process in which an automated information system generates an administrative decision solely using data collected from information systems without human intervention. The aim of the article is to provide an insight into the legal provisions and practices in Latvia regarding the use of automated decision-making systems by the government when drafting individual administrative decisions for private persons.

This article is the first comprehensive outline of the use of automated decision-making systems concerning the Latvian legal system. Until now, there have been very few contributions in Latvia regarding the general considerations of automated decision-making systems, including the use of artificial intelligence in government decisions. In 2020, the Cabinet of Ministers approved a policy statement "On the Development of Artificial Intelligence Solutions"[1], which outlined the existing practices of the use of artificial intelligence systems in government operations. The statement contained information that artificial intelligence has been used in developing chatbots for government institution websites, analysing data gathered by speed cameras in the Future Intelligent Transport Systems project, to some degree for automated checks by the State Revenue Service when comparing data submitted in tax declarations, as well as several internal government operations not involving decision-making towards private persons. The most notable academic contribution has been provided by Irena Barkane in her book "The Role of Human Rights in the Age of Artificial

[1] Informatīvais ziņojums *Par mākslīgā interneta risinājumu attīstību*, <https://likumi.lv/ta/id/342405-par-maksliga-intelekta-risinajumu-attistibu>, accessed 13 September 2024.

Intelligence: Privacy, Data Protection and Regulation for Preventing Mass Surveillance"[2]. The book contains a subchapter explaining the concept of automated decision-making and the General Data Protection Regulation[3], as well as the [then-draft] Artificial Intelligence Act[4] on this matter. Although the book does not examine the legal regulation and practice of Latvia, it concludes that "human oversight is a vital requirement for the facial recognition and other AI surveillance technologies and must be ensured in all cases. However, this requirement is not clear. It could be incorrectly implemented as a simple validation of all system results, making it fully automated"[5].

This article outlines the regulation and use of automated decision-making systems by the government in three steps. First, the article provides an explanation of the general legal framework for making administrative decisions in Latvia, thereby helping to understand the historical and legal background of the current legal solutions regarding automated decision-making. Secondly, specific legal provisions regarding the use of automated decision-making systems and practices concerning their application are explained. The data regarding the practical use of automated decision-making have been gathered through interviews with officials responsible for their implementation. The legal framework is examined based on the legal provisions in force as of September 2024. Lastly, general remarks on the future use of automated decision-making systems are offered.

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[2] I. Barkāne, *Cilvēktiesību nozīme mākslīgā intelekta laikmetā. Privātums, datu aizsardzība un regulējums masveida novērošanas novēršanai* (2023).

[3] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L 119/1.

[4] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) [2024] OJ L, 2024/1689.

[5] Barkāne, cit. at 2, 286.

2. General Legal Framework for Making Administrative Decisions

Individual binding decisions adopted by the government and addressed to a private person are regulated by two main laws: the Administrative Procedure Law[6] and the Law on Administrative Liability[7].

The Administrative Procedure Law was adopted in 2001 and provides a universal legal framework for the adoption of administrative acts. The concept of an administrative act in Latvia is derived from the German *Verwaltungsakt*[8] and is defined in Article 1, Part 3 of the Law: "An administrative act is an externally directed legal act issued by an institution in the field of public law with regard to an individually indicated person or individually indicated persons establishing, altering, determining or terminating specific legal relations or determining an actual situation". Therefore, the concept of an administrative act is very broad in respect of the diversity of subject matter, form, and scope of discretionary powers of the authority. An administrative act is traditionally and primarily understood as a written decision of an authority granting or denying rights or conferring duties to a private person. However, administrative acts can also be orders given orally by a police officer or binding regulations issued by technical devices. It has been an undisputed conclusion that traffic lights are a type of so-called general administrative act[9] and thus perhaps the first automated decision in Latvian administrative procedure law.

An important type of classification of administrative acts with regard to automated decision-making is whether the legal provisions provide discretionary powers in determining the legal consequences of the administrative act. In this regard, there are so-called mandatory administrative acts, administrative acts of free issue, free content, and optional administrative acts (Article 65 of the Administrative Procedure Law). In the case of a mandatory administrative act, an authority has no discretion; according to the

[6] Administratīvā procesa likums 2001.
[7] Administratīvās atbildības likums 2018.
[8] J. Briede & E. Danovskis, *Administrative Law in Latvia*, in I. Deviatnikovaitė (ed.), *Comparative Administrative Law. Perspectives from Central and Eastern Europe* (2024) 68–95.
[9] J. Briede, *Administratīvais akts* (2003), 118; J. Briede, E. Danovskis, A. Kovaļevska, *Administratīvā procesa tiesības. Mācību grāmata* (2023) 64.

legal provisions and circumstances of the case, only one definite outcome of the case can be correct. With respect to mandatory administrative acts, it can be argued that they are the most likely to be made by algorithms.

The Administrative Procedure Law neither provides for nor prohibits the use of automated decision-making systems in determining administrative acts. Generally, administrative acts are issued by "an institution", broadly defined as "a legal entity, a unit, or an official thereof on which specific State authority powers have been conferred in the field of State administration by a legal act or contract governed by public law" (Article 1, Part 1 of the Administrative Procedure Law). Hence, the author of an administrative act can be either an official or any institutional unit competent to issue the administrative act in question.

The Administrative Procedure Law also does not require a written administrative act to be signed by an official. The requirement that any legal document should be signed is prescribed by the Law on Legal Force of Documents[10]. Since 2016, this law has been modified, stating that for a document to have legal force, "the signature (except in cases laid down in the Law)" should be included in the law. There are only a few cases where the law provides exceptions, and some of these will be examined in the next chapter. Therefore, to use completely automated decision-making for written administrative acts, the law must explicitly provide an exception from the signature rule.

Another part of government decisions binding on individuals includes decisions on administrative fines, which are regulated by the Law on Administrative Liability. Generally, decisions in administrative offences are taken by officials who are obliged to secure the relevant evidence, organise a hearing, and evaluate the legally relevant circumstances to determine whether and to what extent a person should be fined for the committed offence. However, there are only two categories of administrative fines where automated decision-making has been explicitly outlined in the law: 1) administrative fines in traffic, if an offence has been recorded by technical means without stopping the vehicle (speed cameras and similar technical devices) (Article 162 of the Law on Administrative Liability), and 2) administrative fines for failure to comply with the term for submitting tax and informative

[10] The Law on Legal Force of Documents 2010.

declarations or failure to submit the relevant declarations (Article 164 of the Law on Administrative Liability). Article 162 stipulates that, in such instances, the fine is applied to the vehicle owner, and the minimum amount of the fine prescribed in the relevant provision must be applied. Article 162, Part 3 of the Law states that "a decision to apply a penalty for an offence recorded by technical means without stopping a vehicle shall be valid without signature". Article 164 of the Law provides that "administrative offences may be recorded and decisions may be taken in the information systems of the State Revenue Service regarding the application of a penalty concerning the failure to comply with the term for the submission of tax and informative declarations or the failure to submit the relevant declarations".

While automated decision-making has been used in traffic cases since 2013, when a similar regulation to Article 162 of the Law on Administrative Liability was adopted in the Road Traffic Law[11], the legal provision allowing the use of information systems in State Revenue Service cases has not been implemented due to a lack of IT solutions.

In cases of administrative offences, the use of automated decision-making is permitted only in the aforementioned types of cases and not as a general rule. This approach is justified because, typically in administrative offence cases, human (official) intervention is a natural prerequisite for reaching a just decision. Most legal provisions that delineate the limits of fines grant authorities discretionary powers. Although several institutions have adopted internal guidelines prescribing rather detailed algorithms for determining fines, the evaluation of the interplay of various circumstances in a case can be effectively conducted only by a human. At present, no artificial intelligence systems are used to make decisions that involve discretionary powers. Article 9 of the Law on the Processing of Personal Data in Criminal Proceedings and Administrative Offence Proceedings[12] prescribes a general prohibition on the use of automated individual decision-making: "A competent authority is prohibited from making decisions that are based solely on automated processing, including profiling, if they produce an adverse legal effect on a data subject or significantly affect them, except in cases where such decision-

[11] Amendments of the Road Traffic Law 2013.

[12] On Processing of Personal Data in the Criminal Proceedings and Administrative Offence Proceedings 2019.

making is provided for in external law or regulation which includes safeguards for the rights of the data subject." This provision has been transposed from Article 11 of Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data by competent authorities for the purpose of the prevention, investigation, detection, or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such data, repealing Council Framework Decision 2008/977/JHA[13]. The laws currently permitting automated data processing are those mentioned in this chapter.

An important development regarding automated decision-making in administrative offence procedure are draft amendments to the Law on Administrative Liability submitted to the Parliament by the Cabinet of Ministers[14]. The draft law provides a new chapter, "Automated decision-making", and introduces five new articles on automated decision-making. The law explicitly states that automated decision-making in administrative offence cases is allowed only when provided for by this law. No new instances of automated decision-making are provided, but the abovementioned Articles 162 and 162 have been amended with a direct sentence that in these cases automated decision-making is to be allowed. The draft law states that automated decision-making is a process when a decision is based solely upon automated data processing without the involvement of an official. The draft law prohibits the use of machine learning systems (artificial intelligence) in administrative offence cases, entitles an addressee of a decision to require additional justifications for the decision, and provides a longer time period for an appeal (one month rather than 20 days) and requires automatically adopted decisions to contain a direct notification that it has been drafted using an automated decision-making system. It is expected that the draft law will be adopted in 2024.

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[13] Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such data, and repealing Council Framework Decision 2008/977/JHA.

[14] Amendments to the Law on Administrative Liability (draft), at https://titania.saeima.lv/LIVS14/saeimalivs14.nsf/0/8EC3E3BDDEA355FFC2258B2E0021701F?OpenDocument, last accessed 9 October 2024.

3. Specific Legal Regulation and Practices of Automated Decision-Making in Latvia

As noted in the previous section, the necessity for specific legislative approval for automated decision-making arises from the requirement that a written decision must be signed by an official. There are no rules prohibiting the use of automated systems, provided an administrative decision is checked and signed by an official. Instances when the use of automated systems is permitted are rare, and in some cases, the legal provisions allowing the use of automated systems are not applied in practice.

The most notable provision allowing for the use of automated systems is Article 6, Part 1(3) of the Law on Immovable Property Tax[15]: "The signature of an official of the tax administration shall not be required on a payment notice if it has been prepared electronically. In such case, it must bear the remark: 'The payment notice has been prepared electronically and is valid without signature'." The option to prepare administrative acts – payment notices for immovable property tax – was introduced into the law in 2009[16]. The legal provision does not mandate the use of automated systems to prepare payment notices; initially, only a few local municipalities employed this option (as immovable property tax is administered by local municipalities). However, gradually, all local municipalities have adopted automated systems for preparing payment notices. Although there are no external normative provisions outlining the process of preparing payment notices, the process is, in practice, completely automated in most cases – data are gathered from various information systems, and necessary algorithms are deployed to prepare the payment notice. Recipients of the payment notice are entitled to contest a decision in the local municipality, and any errors are corrected by officials. The systems are regularly checked, and post-control audits are performed routinely[17]. The use of automated systems for immovable property tax has been successful due to the mandatory nature of the administrative act (i.e., there is no discretionary power) and the availability of all necessary data from various information systems to generate a correct decision.

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[15] Law on Immovable Property Tax 1997.

[16] Amendments of the Law on Immovable Property Tax 2009.

[17] For instance, Riga City Municipality has adopted internal guidelines on the procedure by which the Data Department performs data registration and update follow-up.

General entitlement to use automated decision-making is granted to the State Revenue Service. In 2019, the Law on the State Revenue Service[18] was amended[19] with Article 4(2), which provides the following: "1. In order to facilitate the detection and prevention of tax evasion and customs offences, the State Revenue Service may, in conformity with the requirements of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (hereinafter the Data Regulation) and other laws and regulations, make a decision within the information systems in the framework of administrative proceedings within an institution, including data profiling of natural persons for the purpose of making such decisions, with an indication that the decision has been made within the information systems. A natural person may contest such a decision to the Director General of the State Revenue Service and appeal it to a court in accordance with the procedures laid down in this Law or the Law on Taxes and Fees. 2. Upon making the decision referred to in Paragraph one of this Article, the State Revenue Service shall ensure personal data protection measures corresponding to the Data Regulation and other relevant laws and regulations. Information on the procedures for exercising the rights of data subjects specified in the Data Regulation and other relevant laws and regulations related to the decision referred to in Paragraph one of this Article shall be published on the website of the State Revenue Service". This provision was initiated by the State Revenue Service, and the explanation accompanying the proposal contained information that the "State Revenue Service, when examining the annual income tax declarations of natural persons, provides an automated refund of personal income tax overpayments in the event of a favourable decision, if no verification of justified expenditure documents for the taxation year is required. Thus, the State Revenue Service is already currently ensuring the issuance of a favourable administrative act within the information systems of the State Revenue Service as a result of profiling the data of natural persons"[20].

[18] Law on the State Revenue Service 1993.

[19] Amendments of the Law on the State Revenue Service 2019.

[20] Letter of the State Revenue Service to the Parliamentary Committee of 17 October 2019, at

At the time of writing, a new draft Law on the State Revenue Service has been submitted to Parliament by the Cabinet of Ministers. This draft contains a similar provision regarding decision-making in information systems[21]. However, during the coordination procedure prior to its submission to the Cabinet of Ministers, the Data State Inspectorate raised objections with the following arguments: "In this specific case, for a broadly interpretable purpose – to promote the detection and prevention of tax evasion and violations of customs regulations, which could encompass any activity performed by the State Revenue Service – it is expected that decisions will be made in information systems, including profiling the data of natural persons for this purpose. Firstly, it is unclear what is meant by 'decision-making in information systems' and 'personal data profiling'. Secondly, in accordance with Article 22 of the General Data Protection Regulation (Regulation (EU) 2016/679), there is a general prohibition on making decisions regarding a data subject based solely on automated processing, including profiling, except where permitted by law and where appropriate measures are in place to protect the rights of data subjects"[22]. Despite these objections, the provision was retained in the draft law submitted to Parliament. However, in practice, the use of automated decision-making systems based on the existing Article 4.[2] of the Law on the State Revenue Service is limited to the aforementioned favourable decisions.

As mentioned in the previous section, Article 164 of the Law on Administrative Liability also entitles the State Revenue Service to use information systems to generate decisions regarding fines for failure to comply with the deadline for submitting tax and informative declarations or failing to submit the relevant declarations. However, in practice, this provision is not utilised because the information system has not yet been developed.

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https://titania.saeima.lv/LIVS13/SaeimaLIVS13.nsf/0/47AFBD74B8B353A6C2258496003BC7C8?OpenDocument, accessed 8 September 2024.

[21] Article 13 of the Draft Law on the State Revenue Service, at https://titania.saeima.lv/LIVS14/saeimalivs14.nsf/0/C2587C3886AE5143C2258B3C00376F15?OpenDocument, accessed 8 September 2024.

[22] Opinion of the Data State Inspectorate of 15 May 2024, at https://tapportals.mk.gov.lv/reviews/resolutions/ad556596-c2db-43ad-bc41-9be3e1aac183, accessed 8 September 2024.

As noted in section 1 of this article, the use of automated decision-making systems in road traffic offences (excessive speed) has been permitted by law since 2013. Offences are detected by speed cameras, which identify the vehicle's number plate and automatically gather information about the vehicle's owner to prepare a decision on a fine. The legal provisions stipulate that no discretion is allowed, and a fixed fine, based on the extent of the speed limit violation, is imposed if the offence has been detected by a speed camera. Although the process of generating decisions is automated, in practice, the decisions are manually checked by a human, as the automated systems still produce defective decisions due to misreading the licence plate number or various other factors. For instance, in good weather and daylight, the computer reads data from speed cameras (licence plate numbers) more accurately than in fog or rain. Therefore, when no post-control is exercised by an official after an offence has been captured by a speed camera in bad weather, it is more likely that a decision will be incorrect, leading to more appeals being submitted to superior officers and courts. It is thus more efficient to ensure that the original decision is correct than to manage the appeals process.

As evidenced by current practices in Latvia, the deployment of automated decision-making systems is rather limited. There are two primary reasons for this restricted usage: legal and practical challenges. Legally, the implementation of automated decision-making systems in rendering written decisions must be explicitly sanctioned by law, in accordance with the Law on the Legal Force of Documents and EU data protection regulations. Nonetheless, even in instances where legal provisions permit the use of such systems, practical challenges – mainly the lack of adequate information technology systems – often hinder their actual application.

4. Conclusions Regarding Future Use of Automated Decision-Making Systems

Whenever all the necessary data for making a decision with no discretionary input are available or can be gathered by a machine, the use of automated decision-making systems appears to be a rational approach to reducing the human workload. Although, in the Latvian legal framework, wholly automated decisions must be explicitly authorised by law, the use of information technology

systems to collect or process data is already common practice. The ambiguity surrounding the use of automated decision-making systems lies in the extent of the human oversight required. For instance, a decision by the State Social Security Agency or the State Revenue Service may be partially prepared and signed by an official yet rely significantly on machine-processed data, including inputs from artificial intelligence. Thus, the distinction between a fully automated decision and one signed by an official but largely generated by a machine can become blurred.

What remains crucial is the availability of legal remedies—such as the right to appeal to a higher authority or court—and the thorough review of the decision, which is inherently a human responsibility. At present, it is anticipated that the use of automated decision-making systems in Latvia will be confined to situations where the legal provisions allow no discretionary judgement, and the prerequisites for legal consequences do not involve value assessments, such as general clauses like 'good virtues' or 'public interests'. Instead, these situations depend solely on data collected within information systems. Given that even existing legal provisions permitting the use of automated decision-making systems cannot be fully enacted due to a shortfall in information technology solutions, broader use of these technologies seems currently unfeasible.

It is also crucial to conduct evaluations on an ad hoc basis whenever a new automated decision-making system is introduced. This ensures that all risks of injustice are mitigated and procedural fairness is upheld.

REGULATING AUTOMATION: THE LEGAL LANDSCAPE OF 'AUTOMATED ADMINISTRATIVE ORDERS' IN LITHUANIA

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Abstract

This article examines Lithuania's progress in digitalising its public sector, with a particular focus on the implementation of the so-called 'automated administrative orders'. While automating public sector services offers significant advantages, including cost savings, time efficiency, workload reduction, and the strengthening of key public administration principles — such as improved efficiency, accountability, transparency, equity, and fairness — it is crucial to establish a robust legal framework to support this transformation. Moreover, changes to the legal framework in this area set a precedent for the wider adoption of technology across the public sector. The article explores Lithuania's digital achievements, the role of automation in transforming the legal framework, and the challenges posed by balancing efficiency with fairness. It also considers the future of human oversight in the light of evolving European Union (EU) legal standards, concluding that while automation offers significant benefits, ensuring proper human involvement remains essential to protect fundamental rights.

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1. Introduction

Lithuania's progress in digitalising its public sector has been both impressive and transformative, showcasing its commitment to modernising government operations and making public services more efficient and accessible. While many digital initiatives, such as the eHealth platform (eSveikata), the e-Government portal (epaslaugos.lt), and the use of chatbots have simplified routine tasks and provided citizens with easier access to services, more complex technologies have been introduced with far-reaching effects. Among these, the implementation of 'automated administrative orders' stands out as a key innovation that directly influences the rights and obligations of individuals. By automating certain decisions related to administrative offences, Lithuania has revolutionised its legal framework, cutting down on bureaucratic delays, reducing workloads for officials, and limiting the potential for corruption.

However, this leap forward in automation also raises critical questions about the balance between efficiency and fairness. The absence of human involvement in the issuance of administrative orders prompts an examination of whether such systems fully align with national and EU legal standards. As automated systems continue to take over tasks that were traditionally performed by humans, this study becomes especially relevant not only for 'automated administrative orders' but also for other fields.

The article explores Lithuania's achievements in automating public services, the role of key technologies in driving these changes, and the potential for continued innovation, with a special emphasis on how 'automated administrative orders' have transformed Lithuania's legal framework. The discussion will also address the chosen levels of automation and the need for human oversight.

The article is structured as follows. After providing some general information about the state of the art in the automation and digitalisation of public administration under Lithuanian law in Section 2, Section 3 focuses on the technologisation of public administration procedures within the framework of the Law on Public Administration. Section 4 explores the concept of 'automated administrative orders'. The relevant national legal framework is discussed in Section 5, while Section 6 concentrates on the debate surrounding human oversight in 'automated administrative orders'. Section 7 concludes by summarising the main findings of the article.

2. Automation and Digitalisation in Lithuanian Administration

Lithuania has made many strides in the digitalisation of public services. In the first-ever 2023 Digital Government Index[1] by the Organisation for Economic Cooperation and Development (OECD) Lithuania was ranked fourteenth among the thirty-eight members of the organisation. This ranking assesses the readiness of the governments to digitally transform, becoming more consistent and human-centred. In addition, in the latest European Commission Digital Economy and Society Index (DESI) report of 2024[2] – which monitors Member States' digital progress – Lithuania was ranked 7th in terms of how well digital services work for citizens, evaluating the administrative steps that can be taken online for major life events (birth of a child, new residence, etc.). Lithuania also ranked seventh for businesses, assessing the public services available online needed for starting and running a business. Furthermore, Lithuania was ranked sixth in terms of the transparency of service processes, user-involved service design, and the ability for users to manage their personal data. Notably, Lithuania proudly ranked second in the EU for the amount of pre-compiled data in public service online forms.

According to the latest version of yet another similar EU tool

[1] OECD, *2023 OECD Digital Government Index: Results and key findings* (2024), at https://www.oecd.org/en/publications/2023-oecd-digital-government-index_1a89ed5e-en.html, accessed 7 June 2024.

[2] European Commission, *Digital Economy and Society Index (DESI) 2024* (2024), at https://digital-strategy.ec.europa.eu/en/policies/desi, last accessed 7 June 2024.

used to evaluate digital performance – the e-Government Benchmark 2024[3] – Lithuania was ranked seventh, with users of public services praising how easy it is to use eID and pre-compiled forms to complete tasks. While the Digital Economy and Society Index is a broader measure of the overall digital performance and competitiveness of European countries, the e-Government Benchmark specifically focuses on the performance of public services and how effectively they are provided digitally. In summary, Lithuania, achieving notable rankings in various international assessments, demonstrates its eagerness and potential to continue successfully transforming and digitalising its public sector.

It should also be noted that according to the Special Eurobarometer "The Digital Decade", at the national level, 80 per cent of respondents from Lithuania believe that digital technologies will be important for accessing public services online[4]. This indicates that system users also recognise the potential of technology to improve Lithuania's public administration systems.

In terms of Artificial Intelligence (AI), Lithuania was ranked 35th out of 193 countries in the 2023 Government AI Readiness Index[5]. This further highlights that Lithuania's public sector is well-prepared to integrate AI solutions into the provision of public services.

In addition, electronic methods of service provision have been gaining popularity in Lithuania. In early 2022, 61.5 per cent of institutions provided services via the E-Government Gateway, 100 per cent by e-mail, 79.2 per cent provided consultations on the website, and 53.8 per cent provided information services via social networks[6]. It was also noted that, as of 2023, 72% of Lithuania's population (all persons aged 16–74) actively engage with public

[3] European Commission, *eGovernment Benchmark Report 2024* (2024), at https://digital-strategy.ec.europa.eu/en/library/digital-decade-2024-egovernment-benchmark, last accessed 7 June 2024.

[4] European Commission, *The Digital Decade, special Eurobarometer 532*, at https://europa.eu/eurobarometer/api/deliverable/download/file?deliverableId=88015, last accessed 7 June 2024.

[5] Oxford Insights, *Government AI Readiness Index 2023*, https://oxfordinsights.com/ai-readiness/ai-readiness-index/, last accessed 7 June 2024.

[6] Information retrieved from Official Statistics Portal webpage, at https://osp.stat.gov.lt/en/skaitmenine-ekonomika-ir-visuomene-lietuvoje-2022/skaitmenine-aplinka/e-valdzios-paslaugos, last accessed 7 June 2024.

digital services[7]. It is reasonable to expect that technological advancements in Lithuania's public sector will continue to expand, given the presence of key success factors: a robust technological foundation, the proven effectiveness of existing technologies, and, most importantly, user trust.

Courts have undoubtedly led the way in integrating technology into the Lithuanian public sector. Although the use of information and communication technology varies widely from country to country, several bold initiatives in Lithuania have contributed to the fact that courts in Lithuania are deemed to be fairly digitalised.

Lithuania has been a digital frontrunner since the 1990s[8]. The first big step in the implementation of technology in Lithuanian courts was the set-up of the case-handling LITEKO portal in 2004. LITEKO is a system for the registration, storage, management, search, collection, processing and submission of documents and data required for court activities, court decisions and statistical indicators, a court work automation system that works using computers, standard and application programs, databases, and data transmission networks. The system aims to improve the quality of the court's work as an organisation and make the court system as a whole more efficient. It seeks to increase the transparency of the court system's activities, streamline administrative processes, and support the work of the court staff[9]. In the early days of LITEKO's development, the following modules were implemented: 1) case registration and accounting; 2) exchange of case-related information between courts; 3) search for similar cases and information in the LITEKO databases; 4) court document templates; 5) the production of statistical reports, and 6) public

[7] Information retrieved from Official Statistics Portal webpage, at https://osp.stat.gov.lt/statistiniu-rodikliu-analize?hash=1aa714a3-0d52-40f0-aa8d-265e3ad064a7#/, last accessed 7 June 2024.

[8] Basic technologies were being implemented between 1994 and 1996. As the computerisation of the courts continued, the position of an IT consultant was established, and a computer was purchased for each court. In 1994 a computer program named 'BYLOS', intended for automating the work of court clerks, registering correspondence received by courts, partially automating the calculation of statistics by certain sections and fixing meeting schedules, was created. Cf. V. Nekrošius et al., *Elektronizavimo priemonių naudojimas spartinant lietuvos civilinį procesą*, Teisė 93 (2015).

[9] *Provisions of the information system of Lithuanian courts*, at http://www.teismai.lt/dokumentai/tarybos_nuta-rimai/20060211-435.doc, last accessed 22 September 2024.

notice of court procedural decisions on the Internet[10]. In 2005, a module for automatic generation of timetables was promptly created and installed. Modules for the automatic calculation of the workload of courts and judges and the distribution of cases were also actively developed.

In 2006 the Judiciary Council approved the LITEKO development plan, which provided for the creation of six additional software modules: 1) the automation of court order issuance and other summary processes; 2) the electronic exchange of procedural documents and information between courts and other participants in the proceedings; 3) secure electronic communication between courts; 4) electronic accounting and tracking of fees; 5) the uniform numbering of cases and 6) workstations for judges and court personnel. The plan also included provisions to enable audio or video communication sessions with other LITEKO users within the court system, utilising workplace computer equipment such as a monitor, video camera, microphone, speakers, and headphones. Of these planned modules, the uniform case numbering module was implemented the fastest. The modules for the automatic generation of court hearing schedules, the automatic distribution of cases among the judges, the calculation of the judges' workloads, the control of participants in the proceedings, and the automated issuing of court orders have also been successfully implemented. After the Law on Courts was supplemented with a provision that entered into force on 1 September 2008, which requires cases to be allocated to judges and panels of judges via a computer program[11]; they were finalised and installed accordingly. In 2007, Marco Velicogna, an expert from the European Commission for the Efficiency of Justice, named Lithuania among the judiciaries of Central and Eastern Europe showing impressive results in terms of computer facilities, the use and availability of electronic resources, and the application of electronic registers and case management

[10] *Provisions of the information system of Lithuanian courts*, at http://www.teismai.lt/dokumentai/tarybos_nuta-rimai/20060211-435.doc, last accessed 22 September 2024.

[11] Law amending articles 33, 34, 36, 38, 39, 42, 43, 47, 51, 55(1), 57, 61, 63, 64, 69(1), 81, the title of Chapter IX, replacing and amending articles 83, 84, 85, 86, 90, 98, 101, 103, the title of the second section of Chapter XII, articles 106, 107,108, 119, 120, 122, 124, 127, 128, 129, recognising articles 89, 109, 110, 111, 112, 125 as invalid and supplementing the law with articles 53(1), 53(2) and the third section of Chapter IX of the Law on Courts of the Republic of Lithuania 2008.

systems[12].

The digitalisation of Lithuanian courts took a big step forward in 2013, when the LITEKO subsystem e.teismas.lt came into operation. On the e-services portal, individuals and businesses were able to submit procedural documents themselves using standard templates. It was also not necessary to send the attachments separately by mail; it was enough to scan them and upload them to the electronic system. In addition, on the aforementioned portal, the participants in the process were able not only to submit documents to the court, but also to familiarise themselves with all the case materials, access the records of court hearings, and monitor the progress of the case. Portal users with legal interests in the case were able to receive the information on all court proceedings via their accounts and the information was sent by email or short messages through their GSM operator[13]. The Law on Courts[14], the Law on Administrative Proceedings[15], and the Code of Civil Procedure[16], state that the electronic data related to judicial and enforcement proceedings must be managed, registered, and stored using information technology. Also, the right of the parties to proceedings to remote access to electronic case files and the right to submit procedural documents to courts electronically were established, and the use of electronic procedural documents and electronic signatures in the procedural activities of courts was authorised. From 1 July 2015, the same system has been used in administrative offence cases and from 1 January 2020, the procedures in some criminal cases (judicial order in criminal cases) have been managed electronically as well. To sum up, there was a gradual transition to the processing of electronically initiated cases in electronic form only.

The convenience of using the portal was increased by integrating it with the centralised state-administrated platform for public electronic services (the Electronic Government Gateway).

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[12] CEPEJ studies No. 7, *Use of information and communication technologies (ICT) in European judicial systems* (2007), at https://rm.coe.int/european-commission-for-the-efficiency-of-justice-cepej-use-of-informa/1680788281, last accessed 22 September 2024.

[13] *Overview of the activities of the Supreme Administrative Court of Lithuania 2013*, at https://www.lvat.lt/data/public/uploads/2018/01/lvat_2013_met_veiklos_apzv-1.pdf, last accessed 22 September 2024.

[14] Law on Courts No. 153-7826 2012.

[15] Law on Administrative Proceedings No. 13-308 2012.

[16] Code of Civil Procedure No. 36-1341 2012.

This platform enables authentication via electronic banking, identity cards, and electronic signatures. While increasing accessibility to the portal, the courts provide specific data to those who, for some reason, are unable to authenticate via the system, such as foreigners, allowing them to access it. Users registered with the system may load case forms and other documents directly onto the portal by compiling up to 100 forms from a document list with unique data, saving them to their own account or personal computer for later submission to a court. The system automatically fills in pre-existing data from the user's account into the procedural documents, speeding up the compilation process. Another convenient function of the system is that *e.teismas.lt* users can calculate the stamp duty, generate payment orders, and pay the stamp duty, litigation costs, or court-imposed fines directly via the Internet banking system. All litigation costs may thus be covered with just a few clicks. The system also features an integrated mediation service that ensures interactions between mediators and parties to the dispute are safe and trustworthy. Another advantage of the portal is quick access to case material. For example, portal users can download in ADOC format the general case information, documents provided by the parties, and documents issued by the court; they can also access recordings of the court hearings. Interestingly, among many other features of this system, enforcement procedures can also take place electronically. Parties to the dispute are able to submit applications to the bailiff and receive enforceable instruments electronically. Auctions of a debtor's property are also organised only electronically. The bailiffs' electronic system is already integrated into the LITEKO system. The submitted enforcement documents are distributed to the bailiffs automatically, ensuring a proportionate distribution of the enforcement documents to all bailiffs in the same area of activity and ensuring that the enforcement documents of the same debtor are submitted to the same bailiff. It can be concluded that these functions not only ensure the success of the *e.teismas.lt* portal, but also improve access to justice, as well as compliance with the principles of economy and efficiency. In conclusion, Lithuania's courts are among the most highly-digitalised in Europe, thanks to a series of innovative information and communication technology initiatives and supportive regulations. The LITEKO system, which has evolved since its launch in 2004, with the most significant advancement being the introduction of the e.teismas.lt subsystem

in 2013, plays a central role in automating court processes, increasing transparency and improving the efficiency of judicial procedures. The system facilitates everything from case management to remote hearings and electronic submissions, benefiting both court personnel and the public.

A few additional examples of technology used across various sectors in Lithuania's public sector will be explored further. Lithuania's eHealth[17] and e-Government[18] platforms are prime examples of automation and digitalisation in public services, transforming traditionally manual processes. The eHealth (eSveikata) platform transforms healthcare administration by automating and digitalising key tasks. Through eSveikata, patients can easily access their medical records, schedule appointments, and manage prescriptions online, reducing the need for manual record-keeping and in-person visits. This automation enhances operational efficiency, minimises errors, and shortens waiting times, empowering patients with greater control over their healthcare. For healthcare professionals, it simplifies procedures such as managing prescriptions, tracking patient follow-ups, and maintaining records, resulting in faster, more precise service delivery. Overall, this digitalisation enhances the patient experience and allows healthcare providers to allocate resources to more complex and critical tasks. Lithuania's e-Government portal (epaslaugos), on the other hand, automates a wide array of public services, from tax filing to social benefit applications. By digitalising these processes, the platform eliminates the need for citizens to physically visit government offices, saving both time and resources. This automation speeds up tasks such as filing tax returns, benefit requests, and document submissions, making the entire process more user-friendly. Moreover, it centralises numerous government services into a single, easily accessible portal, simplifying interactions with public services that would otherwise require navigating multiple departments and paperwork. This marks a major advancement in digitalising public administration, streamlining operations and enhancing accessibility for all citizens. In conclusion, both the eHealth platform and the e-Government portal share the common goal of automating and digitalising essential services to improve efficiency and user accessibility. By replacing manual processes with digital systems, both platforms

[17] See https://www.esveikata.lt, last accessed 22 September 2024.
[18] See https://epaslaugos.lt, last accessed 22 September 2024.

reduce the need for in-person visits and paperwork. These platforms lay the foundation for further digital transformation of public services in Lithuania, paving the way for more advanced and integrated digital solutions.

Moreover, several chatbots are already being used to enhance service efficiency and provide 24/7 assistance in the Lithuanian public sector. The State Tax Inspectorate's virtual assistant chatbot SIMAS was one of the first in the Lithuanian public sector. Since December 2020, 'Simas', the virtual assistant has been available on their website, offering advice to residents on general inquiries at all times. At present, Simas can assist with income and asset declarations, financial support applications, business licences, and individual activity certificates, fines, and the monthly non-taxable income calculator. In addition, residents are not limited to selecting from the subtopics or questions suggested by Simas; they can initiate a real conversation by typing questions, even in informal or irregular language. The virtual assistant continuously learns from the queries it receives, using AI to gather and analyse information in order to provide the most accurate response in real time. Responses can be delivered not only in writing but also through online links, visual materials, or attached files. Another chatbot, Ema, was introduced by the Lithuanian Employment Service in 2024. The chatbot currently offers support, in Lithuanian, on matters such as registering with the Employment Service, tuition assistance, and the employment of foreign nationals. Additionally, Ema can respond to general enquiries about the Employment Service, including its purpose, the services it provides, and where to find relevant legislation. In summary, the deployment of chatbots like SIMAS and Ema represents a significant step forward in Lithuania's efforts to modernise and automate its public sector. These AI-driven tools not only improve service efficiency but also enhance accessibility by offering round-the-clock assistance. SIMAS, with its comprehensive support for tax-related queries, and Ema, addressing employment services, both demonstrate how technology can streamline bureaucratic processes and provide timely, personalised responses.

In recent years, the State Tax Inspectorate has adopted technological innovations to improve the efficiency of its operations. In 2022 a robotic process was launched to handle the investigation of taxpayers who owe money to the state. It seeks to recover debts from those who may have acquired assets, by

checking various data sources, such as employment records, real estate registers, vehicle data, agricultural machinery, and ship registries, to determine whether the taxpayer possesses any assets that can be used to settle the outstanding debt. Another example, where the State Tax Inspectorate has incorporated automation is in the application of stamps to documents. The State Tax Inspectorate receives and sends various documents to and from foreign countries, which require a fixed text stamp. These documents are typically in PDF, Word, or Excel formats, as well as images. Due to the large volume of documents, it was decided to use robotic assistance for applying the stamps. The future plans involve automating the following processes: the model for assessing the financial and property status of taxpayers in the area of tax loan agreements, forming instructions for irrecoverable amounts and the preparation of decisions and protocols for administrative offences other than those currently handled by the existing robot[19]. By automating processes such as investigating asset ownership and applying stamps to documents, the Inspectorate has reduced manual workloads and increased productivity. Future plans for further automation, including financial assessments and administrative decisions, indicate a continued commitment to leveraging technology to improve the efficiency of its operations.

The Bank of Lithuania, the central bank of the Republic of Lithuania and a member of the European System of Central Banks, also applies automation for standard tasks. Employees of the Bank of Lithuania, who handle disputes between consumers and financial market participants, can use an implemented technical solution to instruct a robot to prepare certain documents, such as notifications to the consumer or their representative about the commencement of the dispute resolution process. The automated process, powered by software, enables the robot to select the appropriate standard document template and enter the necessary values in the relevant fields (for instance, the dispute resolution deadline, the name of the financial market participant, etc.). The employee's only remaining task is to review the generated document[20]. The automation of standard tasks at the Bank of Lithuania enhances efficiency, reduces costs, improves accuracy,

[19] The information was received on 14 March, 2024 following a response from the State Tax Inspectorate regarding the automation of processes.

[20] G. Strikaitė-Latušinskaja, *Automatizuoti administraciniai nurodymai Lietuvoje*, Teisė 125 (2022).

and streamlines dispute resolution, ultimately boosting overall productivity and service quality. In addition, the Bank of Lithuania has introduced a smart e-licensing tool that enables potential financial market participants to apply for licences remotely in a quicker, simpler, and more cost-effective way. Currently, the tool supports applications for nearly all types of licences.

Lastly, one of the most significant examples of delegating a key function with legal implications was the introduction of 'automated administrative orders', enabling decisions with legal consequences to be made automatically. Following the decision taken on 6 March 2018 by the State Road Safety Commission to adopt modern technologies to automate and simplify the processes of investigating, formalising, and holding individuals administratively accountable for traffic rule offences[21], on 1 January 2019 Lithuania introduced the automated issuance of certain administrative orders. This particular example of automation will be further examined in detail later in the article.

3. The Technologisation of Public Administration Procedures in the Regulation of the Law on Public Administration

The Law on the Provision of Information to the Public[22] and the Law on the Management of State Information Resources[23] form the primary legal basis for the technologisation of public services in Lithuania. The Law on the Provision of Information to the Public regulates the dissemination of information by media and public institutions, ensuring transparency, accuracy, and public access to information, including through digital platforms. The Law on the Management of State Information Resources governs the creation, maintenance, and protection of state information systems, facilitating the secure and efficient digitalisation of public services. However, the processes of public administration procedures, their

[21] The decision of the State Road Safety Commission meeting on 6 March, 2018, at https://sumin.lrv.lt/uploads/sumin/documents/files/Struktura_ir_kontaktai/Komisijos_ir_darbo_grupes/Valstybine_eismo_saugumo_komisija/Valstybines_eismo_saugumo_komisijos_protokolai/LV-46.pdf, last accessed 22 September 2024.

[22] Lietuvos Respublikos visuomenės informavimo įstatymas No. I-1418 1996.

[23] Lietuvos Respublikos valstybės informacinių išteklių valdymo įstatymas No. XI-1807 2011.

individual stages, and the requirements for individuals and public administration entities are regulated by the Law on Public Administration[24], which serves as an umbrella law for all areas of public administration. The faster and more versatile application of information technologies in the public sector has been further supported by the incorporation of the innovative 'principle of innovation and openness to change' in the Law on Public Administration. This principle mandates that public administration entities seek new and effective ways to better address issues in public administration and continuously improve their operations by applying the most advanced methods, models, technologies, tools, and examples of best practice.

Although this is not a traditional doctrinal principle of administrative law, it is applied in specialised activities with significant legal consequences for individuals. These activities are related to the functioning of public authorities when adopting individual administrative decisions concerning private individuals, providing administrative services, or supervising the activities of persons and enterprises.

Furthermore, the law enshrines other principles that ensure the development of technology, such as the 'principle of efficiency', which means that when making and implementing decisions, a public authority uses the resources allocated to it at the lowest possible cost while aiming for the best possible outcome. Additionally, the 'one-stop-shop' principle is directly applied when making administrative decisions. This principle aims to reduce the administrative burden on private individuals approaching a public administration entity. It not only ensures that the individual has the right to obtain all answers to their requests or complaint in one place but also imposes an obligation on the public administration entity to act proactively and obtain necessary information from other institutions or registers if such information is required to make an administrative decision.

In administrative practice, several significant legal regulatory changes have been made at the legislative level based on these principles. Firstly, the Law on Public Administration, which primarily establishes substantive rules related to the methods of submitting documents and the grounds for the non-examination of requests or complaints, was amended in 2020. The procedural rules

[24] Lietuvos Respublikos viešojo administravimo įstatymas No. VIII-1234 1999.

regarding the submission of requests and complaints, detailing the actions and stages through which public administration entities carry out administrative procedures, are determined by regulations approved by the Government.

This regulatory approach eliminates the need for excessively detailed legislative regulation of request submission and examination procedures. At the same time, it allows for more flexible conditions for introducing new technological solutions more quickly, without the need to go through the complex parliamentary process required to amend provisions of the Law on Public Administration.

Information technologies were first integrated into the procedures for examining individuals' complaints and requests within public administration institutions in 1999, with the initial version of the Law on Public Administration. Individuals submitting a request or complaint to an institution in the electronic space could do so via the official electronic tools provided by the institution, as indicated on the institution's website. However, in such cases, the individual's request had to be signed using an electronic signature (Article 19, Section 5 of the Law on Public Administration) on the egovernment Gateway portal. If a request or complaint was submitted via email without an electronic signature, and there was no way to verify the authenticity of the submission, it could be left unexamined. At that time, the institution providing responses and decisions to the individual also had to sign its documents using the secure electronic signature of the head of the institution.

Since 2020, a special article regarding the use of information and communication technologies by the authorities has been introduced into the Law on Public Administration[25]. It was established that the National Electronic Delivery System, which uses the postal network (the 'E-Delivery System'), is the primary platform through which official electronic documents are communicated, prepared, and submitted in the activities of public administration entities, both in inter-institutional operations and in dealings with private individuals.

However, the law also provides an alternative, allowing official electronic documents to circulate through other means. For

[25] Law on Amending Articles 1 and 2 of the Law No. XIII-2987 on Amending the Law No. VIII-1234 on Public Administration of the Republic of Lithuania No. XIII-3329 2020.

instance, public administration entities may use a shared document management information system or may have developed their own electronic tools for identifying individuals. Nevertheless, only electronic deliveries made via the E-Delivery System have the same legal and evidential value as registered postal deliveries. The electronic delivery service is provided free of charge to individuals sending electronic deliveries to public authorities through the E-Delivery System.

4. 'Automated Administrative Orders' for Administrative Offences

Under Lithuanian law, an administrative order is a settlement proposal recorded in the administrative offence protocol. It allows the person held administratively liable to voluntarily pay a fine equal to half of the minimum fine imposed for the offence, provided payment is made within fifteen calendar days from the date of delivery of the protocol. If the protocol, along with the proposal, is drawn up in the absence of the person concerned, this period is extended to thirty calendar days from the date of its dispatch. In the case of a repeated administrative offence, the proposal provides the option to pay the minimum fine established by the Code[26]. This mechanism allows individuals who have committed certain administrative offences to settle with the government without undergoing a full legal procedure by voluntarily paying a reduced fine (half of the minimum), or, in cases of repeat offences, the full minimum fine, within a specified time frame.

Administrative orders should generally be regarded as a tool for achieving the reconstructive function of liability and fostering reconciliation between the offender and the state, with a primary focus on prevention (protection) rather than repression (punishment). The institution of administrative orders represents a model of cooperation with state institutions, rather than fostering confrontation between individuals and the state. This approach promotes peaceful interaction rather than coercion. The aim of this strategy is to prevent greater harm that may result from individuals failing to comply with legal requirements. This is achieved by offering the opportunity to immediately pay half of the minimum fine, thereby encouraging negotiation with the state and

[26] Article 610 of the Code of Administrative Offences of the Republic of Lithuania XII-1869 201.

persuading the individual to admit their fault and wrongdoing, leading to reconciliation with the state, rather than punishment. Therefore, the purpose of the administrative order containing the settlement proposal is to encourage individuals to voluntarily comply with legal requirements. This strategy is thus preventive in nature and is more valuable for those individuals who are inclined to follow the law, but less so for those unwilling to voluntarily comply with the legal regulations set by the state. As a result, it is more effectively adopted in areas where no serious legal offences occur.

Moreover, administrative orders fulfil the specific deterrence objective (prevention) of personalised administrative liability. The effect of such liability is directed towards the individual, with the expectation that they will refrain from reoffending. This strategy plays a positive role in reminding individuals of the need to comply with legal requirements, and that in the event of repeated offences, they will not be allowed to evade legal consequences. In legal scholarship, such an individual deterrence strategy is criticised as costly and resource-intensive, especially when traditional administrative procedures are used to identify a large number of offenders. However, when automated processes are used, aiming to identify as many offenders as possible and collect fines on a voluntary basis, the economic benefits of its application increase, even if, in practice, the fines are relatively small.

In addition, the introduction of this system in cases of traffic rule offences was prompted by the observed trend that disputes typically did not focus on the violation itself, its classification, circumstances, or the question of guilt, but rather on the severity of the administrative penalty and the amount of the fine imposed. Consequently, appeals were frequently filed with the aim of alleviating the individual's situation, seeking to minimise the negative consequences of the penalty without challenging the evidence of the offender's guilt[27]. In conclusion, introducing this system into the Lithuanian legal framework in 2011 aimed to reduce the negative impact on individuals while providing a more

[27] Explanatory memorandum to Law amending Articles 30(2), 226, 232, 232(1), 239, 239(3), 241, 241(1), 246(1), 246(2), 246(7), 249, 259, 260, 261, 262, 282, 313 and the twenty-third section of the Code of Administrative Offences of the Republic of Lithuania, supplementing the code with Articles 257(1), 260(1), 260(2), twenty-third(1) and twenty-third(2) No. XIP-1839 2010.

effective means of resolving offences. Furthermore, an additional objective was to avoid costly proceedings for institutions and courts at all levels. It was emphasised that this efficient and streamlined approach to handling straightforward, clear, and indisputable administrative law offences would provide an optimal means of achieving the objectives of administrative penalties[28]. Accordingly, case law has confirmed that the establishment of the administrative order system significantly optimised the duration of administrative violation cases, allowing legal proceedings to be resolved primarily at the investigation stage. By preventing cases from progressing to later stages, this approach also helped to conserve substantial resources[29]. The introduction of administrative orders with settlement proposals not only simplified the legal process for certain administrative offences but also reduced the costs and time consumption associated with enforcing liability for these offences. Another objective of implementing this system was to prevent corruption. By creating a more structured and transparent framework, administrative orders limited opportunities for corrupt practices. For example, standardised procedures for handling administrative offences reduced discretionary power, while a predictable framework for penalties minimised the possibility of negotiating reduced penalties. Resolving cases at the investigation stage further reduced the opportunity for direct interactions between offenders and officials. In summary, these administratie orders are a simplified process for fulfilling the objectives of administrative penalties for specific offences of administrative law. This procedure provides a quicker and more cost-effective resolution by allowing the offender to reconcile with the government by voluntarily paying a reduced fine for the offence. This approach reduces the need for extensive legal proceedings, saving both time and resources, while ensuring that penalties are enforced efficiently. By encouraging voluntary compliance by means of reduced fines, administrative orders help maintain legal accountability with minimal administrative burden.

Although the notion just explored of administrative order is not a particularly new concept in administrative law[30], what is new

[28] Explanatory memorandum, cit. at 27.

[29] K. Mikalauskaitė-Šostakienė & A. Zykevičius, *Administracinio nurodymo institutas: taikymo ypatumai ir problemos*, Visuomenės saugumas ir viešoji tvarka (9): mokslinių straipsnių rinkinys 160 (2013).

[30] This institute was established in Lithuania in 2011.

is the option for automating issuance, which came into effect on January 1, 2019[31], following amendments to the Code, and was fully implemented on January 1, 2020[32]. Article 611(4) of the Code of Administrative Offences of the Republic of Lithuania now provides an exhaustive list of administrative offences recorded in the absence of the person suspected of committing the offence. For these offences, an administrative offence protocol with an administrative order (or only an administrative offence protocol, or only a decision) can be automatically produced in the Administrative Offences Register. Automation in this process refers to the creation of administrative offence protocols entirely using software, with no human involvement. Instead of an official manually issuing an administrative order, these are automatically created within the Register of Administrative Offences[33]. Automation should be understood as the creation of an order recorded in the administrative offence protocol, allowing the individual to voluntarily pay a fine (either half of the minimum fine or the full minimum fine, depending on the frequency of the offence) within a specified timeframe. The key change lies in how the proposal is issued.

As mentioned, after automation was established, the Code of Administrative Offences of the Republic of Lithuania introduced a finite list of administrative offences for traffic offences that are recorded without the presence of the person suspected of committing the offence. Related changes to the Code were made on 20 December 2018 and came into effect on 1 January, 2019[34]. The

[31] Law amending Articles 33, 38, 417, 424, 569, 573, 575, 589, 590, 595, 602, 610, 611, 612, 669, 682 and 686 of the Code of Administrative Offences of the Republic of Lithuania, Teisės aktų registras, 21888.

[32] The data were obtained on 10 March 2020 from the Communication Department of the Lithuanian Police.

[33] See G. Strikaitė-Latušinskaja, cit. at 20; J. Paužaitė-Kulvinskienė & G. Strikaitė-Latušinskaja, *Automated administrative order in the context of the code of administrative offences*, in M. Doucy, M. Dreyfus, N. Noupadia (eds.), *Changements démocratiques et électroniques dans l'action publique locale en Europe : REvolution ou E-volution ? Democratic and Electronic Changes in Local Public Action in Europe: REvolution or E-volution ?* (2022) 387–405.

[34] Law amending Articles 33, 38, 417, 424, 569, 573, 575, 589, 590, 595, 602, 610, 611, 612, 669, 682 and 686 of the Code of Administrative Offences of the Republic of Lithuania 2018. This introduced the automation of administrative orders for the following offences: 1) breach of the regulations governing the protection and use of surface water bodies' protection zones or shoreline protection strips (in relation to driving or parking vehicles in contravention of the established

scope of legal offences for which 'automated administrative orders' can be issued has been altered a few times already, albeit not significantly.[35] Additionally, two significant changes were made to

requirements); 2) parking vehicles in a forest or driving vehicles through forests where prohibited; 3) illegally driving motor vehicles over grass surfaces, forest floors, or on the ice of bodies of water; 4) driving a vehicle without compulsory motor third-party liability insurance for vehicle owners and operators, or when such insurance is not in place; 5) driving vehicles that unregistered (or re-registered) vehicles in contravention of the established procedure or without undergoing mandatory technical inspection; 6) exceeding the prescribed speed limit; 7) failure to respect road signs, passenger transport regulations, or any other breach of the road traffic rules; 7) breach of the payment procedure for local parking charges in areas designated by municipal councils; 8) breach of the regulations concerning local charges for permits to drive vehicles into state-protected areas, municipally designated nature reserves, landscape protection areas, and locally important protected zones; 9) driving while committing multiple traffic offences that endanger road safety, including illegal overtaking, entering oncoming lanes, participating in illegal races, or causing dangerous situations; 10) breach of the regulations for crossing railway level crossings; 11) breach of the regulations on the use of seat belts, child seats suitable for a child's height and weight, and motorcycle helmets; 12) failure to meet legal obligations to maintain roads and structures safely or to promptly restrict or prohibit traffic on sections posing a safety risk; 13) driving without a permit in vehicles exceeding the allowed axle load by 2 to 4 tonnes, or the maximum weight by 4 to 8 tonnes; 14) driving vehicles exceeding the allowed axle load by over 4 tonnes, or the maximum permitted weight by over 8 tonnes without a permit; 15) conducting work on or near roads, setting up service points, constructing buildings, or placing advertisements in the road protection zone without due authorisation from the relevant authorities; 16) damaging roads, road structures, or traffic control devices; driving tracked vehicles on asphalt; causing road traffic obstructions; or contaminating the road surface; 17) failure to pay the required road usage fee by vehicle owners or operators.

[35] On 30 June 2020, the code was amended, and the relevant article was supplemented with an additional administrative offence of non-compliance by the vehicle owner (operator) with the requirements of the Lithuanian Road Traffic Safety Law (see the Law amending Articles 589 and 611 of the Code of Administrative Offences of the Republic of Lithuania No XIII-3219 2020). On 22 April 2021, the relevant article was amended to include cases involving the storage of non-operational vehicles in public spaces to the list (Law amending Articles 33, 414, 610 and 611 of the Code of Administrative Offences of the Republic of Lithuania No. XIV-266 2021). Finally, on 10 October 2022, the article was updated to include the following offences: 1) driving without completing the required health check, not adhering to licence restrictions (except for specific vehicle types), or with an expired licence; 2) driving without legal entitlement, the correct licence for the vehicle type, or while under suspension; 3) driving after disqualification or in violation of a requirement to use anti-alcohol engine locks; 4) failure by the vehicle owner (operator) to provide details of the person using the vehicle at the time of the offence (Law amending Articles 28, 29, 71, 415, 416,

extend the scope of automation beyond road traffic offences.

Firstly, the scope of automation was expanded on 13 December 2022, following the adoption of amendments that came into effect on 1 May 2023. It was established that when an administrative offence is recorded in the absence of the person suspected of committing it (specifically: 1) breach of the procedure for declaring assets and/or income, including late submission or non-submission of declarations and reports to the tax authority, or incorrect data entry in these documents; and 2) breach of the procedure for submitting reports, declarations, or other documents required by the tax authority, including late or non-submission and incorrect data entry), an administrative order containing the settlement proposal is drawn up and sent to individuals required to submit the necessary documents and data for the functions of the State Tax Inspectorate. These orders are automatically generated in the Register of Administrative Offences and may be unsigned[36]. The need to expand the scope of 'automated administrative orders' arose from the practical reality that individuals often fail to submit declarations to the tax authority on time, while the State Tax Inspectorate lacks the human resources to enforce administrative liability for all offenders. Consequently, these changes were expected to simplify the procedures for documenting the paperwork prepared by the tax authority, establishing the right for the tax authority not to physically sign protocols for administrative offences, with the relative 'automated administrative orders' being entered in the Register of Administrative Offences[37]. In general, this amendment was implemented as part of a project to transpose EU Council Directive (EU) 2021/514 of 22 March 2021 [38] into Lithuanian national law. It introduced a requirement for digital platform operators to report information to the State Tax Inspectorate on sellers earning income through activities facilitated by the platform. Due to the nature and flexibility of digital

417, 420, 422, 423, 424, 426, 427, 428, 431, 589, 602, 603, 608, 611 and 686 of the Code of Administrative Offences of the Republic of Lithuania No. XIV-1446 2022).

[36] Law amending Articles 12, 29, 208, 210, 211, 589, 611 and the Annex to the Code of Administrative Offences of the Republic of Lithuania and supplementing the Code with Articles 188(3), 217(2) No. XIV-1660 2022.

[37] See the explanatory memorandum on draft laws Reg. No. XIVP-2133- XIVP-2141 No, XIVP-2141 2022.

[38] European Union Council Directive 2021/514 amending Directive 2011/16/EU on administrative cooperation in the field of taxation [2021].

platforms, tax authorities often lack information on individuals operating through these platforms and their earnings. This project aims to address the issue of limited reporting on income earned via digital platforms, which hinders fair tax compliance compared to those not using such platforms. Among other things, it simplified procedures for formalising documents related to administrative offences, particularly those involving failure to submit reports, declarations, or other documents required for tax administration purposes. In addition, this regulatory change was driven by the fact that since 2018, following amendments to the Law on Public Administration of the Republic of Lithuania and other legal acts, legal principles and measures for business supervision have been established. These include both mandatory and advisory rules, in line with recommendations from the Organisation for Economic Cooperation and Development (OECD) and the best practices of other countries. The aim of these reforms was to ensure efficient and transparent operations by supervisory authorities, while reducing the regulatory burden on businesses. At the same time, the reform marked a shift towards greater automation in the public sector, particularly in interactions between state institutions and businesses. Individual business supervision procedures were systematically reviewed, introducing more automated data collection for supervision, as well as the automated creation of inspection plans and the automated assignment of inspections.

Secondly, on 16 December 2021, the relevant legal norm was amended to include the automatic generation of an administrative order in the Register of Administrative Offences for the failure by a legal entity or foreign branch to submit accurate financial statements, annual reports, activity reports, or payment reports (including consolidated versions) to the Register of Legal Entities on time, as required by law[39]. This amendment came into effect on 1 July 2024. The purpose of this amendment was to resolve the issue of non-submission of financial statements: the handling of these administrative offences was expected to be simplified and expedited, ensuring that administrative liability is unavoidable. It aimed to reduce the number of legal entities failing to submit annual financial statements, thus increasing the accuracy of data in

[39] Law amending Articles 12, 33, 223, 321, 325, 327, 401, 413-1, 558, 560, 569, 578, 579, 589, 608, 609, 610, 611, 617, 618, 620, 621, 644, 664, 665, also changing the title and appendix of Chapter XXXIX of the Code of Administrative Offences of the Republic of Lithuania and recognising Article 323 as invalid No. XIV-785 2021.

the Register of Legal Entities.

In conclusion, since the initial introduction of automation in 2018, amendments to the Code of Administrative Offences have broadened the scope of legal offences eligible for automation. Key changes in 2019, 2020, 2021, and 2022 expanded the range of offences in areas related to road safety. The adoption of automation beyond road traffic offences has been crucial, particularly in tax administration. With amendments introduced in 2021 and 2022, automation now addresses also the non-submission of financial statements and tax declarations by legal entities and digital platform operators.

For these offences, an administrative offence protocol with an administrative order containing a settlement proposal can be created automatically. Automation is designed to issue settlement proposals for administrative offences detected through photographs or video recordings of vehicles capturing the offences, or through offences recorded by stationary or mobile law enforcement detection systems[40]. Automation is entrusted solely to these types of offences because they are typically clear, objective, and indisputable. Offences such as traffic offences can easily be captured by technology without the need for human judgement or interpretation. This reduces the likelihood of errors, eliminates the need for manual processing, and ensures consistent enforcement. By limiting automation to offences that can be verified through concrete visual evidence, the process becomes more efficient and reliable, minimising the potential for disputes over the facts of the offence. This approach also reduces the risk of corruption and human bias, ensuring consistent and fair enforcement. The focus on these offences aligns with the goals of automating settlement proposals. The objectives of system automation are as follows: 1) to simplify the administration of certain administrative offences; 2) to reduce the number of administrative offence cases being processed; 3) to encourage individuals who have committed administrative offences to pay the imposed fines voluntarily; 4) to reduce the administrative burden on institutions handling administrative offence cases, which require significant human resources and expenses, particularly with the increasing number of traffic safety prevention and control devices; and 5) to reduce the risk of corruption in drafting and sending procedural documents by

[40] Article 611(3) of the Code of Administrative Offences of the Republic of Lithuania No. XII-1869 2015.

automating the generation of administrative offence protocols and eliminating the human factor[41]. In conclusion, the objectives of both the manual system and the automated one are aligned, making the automated option more efficient in achieving the goals of the system.

To conclude, the automation of administrative orders is a significant step in integrating technology into Lithuania's public sector, laying the foundation for future innovation initiatives in carrying out public functions. It represents a significant advancement in the handling of administrative offences by making the process more efficient and reducing the need for human involvement. Overall, the automated system is a more efficient, transparent, and reliable method for handling certain administrative offences, benefiting both the government and the individuals involved.

5. The National Regulation of 'Automated Administrative Orders'

The institution of 'automated administrative orders' containing settlement proposals was introduced on 18 November 2010, when certain changes to the Code of Administrative Offences of the Republic of Lithuania were made, coming into force on 1 January 2011[42]. It should be noted that, since the establishment of this system, issuing an administrative order has been permitted in cases where the violation was documented without the presence of the individual suspected of committing the offence. In summarising the regulatory development of this subgroup of administrative acts, it can be observed that most of the conditions for applying this system under current regulations have essentially remained unchanged since 2011, despite six regulatory changes being implemented (in both the Code of Administrative Offences of the Republic of Lithuania and the Code of Administrative Offences of the Republic of Lithuania, which came into force on 1

[41] Explanatory memorandum to the draft law amending Articles 33, 38, 417, 424, 569, 573, 575, 589, 590, 595, 602, 610, 611, 612, 669, 682 and 686 of the Code of Administrative Offences of the Republic of Lithuania No. XIIIP-2672 2010.

[42] Law amending Articles 30(2), 226, 232, 232(1), 239, 239(3), 241, 241(1), 246(1), 246(2), 246(7), 249, 259, 260, 261, 262, 282, 313 and section twenty-three of the Code of Administrative Offences of the Republic of Lithuania and supplementing it with articles 257(1), 260(1), 260(2), and sections twenty-three(1) and twenty-three(2) No. 142-7257 2010.

January 2017). The most significant change – automation – was introduced on 20 December 2018 and came into force on 1 January 2019[43]. As already mentioned, the automation of administrative orders is driven by the growing need to expedite the investigation of administrative offences and, when necessary, the imposition of fines, likely due to the expansion of speed monitoring systems. Consequently, these updates should be viewed as improvements to the administrative order system, in order to achieve its original objectives.

Another important aspect to consider is the chosen level of automation. The scale ranges from no automation, where all tasks are performed by humans, to full automation, where tasks are entirely handled by algorithms. In this regard, the following changes introduced to the Code of Administrative Offences of the Republic of Lithuania are of particular interest. First, Article 590(2) of the Code of Administrative Offences of the Republic of Lithuania, which outlines the grounds for initiating administrative offence proceedings, was amended to include that the administrative offence procedure can also be initiated automatically by generating an administrative offence protocol or a notice of an act containing elements of an administrative offence in the Register of Administrative Offences. Secondly, Article 611 was supplemented by Section 4, which states that an administrative offence protocol with an administrative order can be automatically generated in the Register of Administrative Offences. It was also specified that the automatically generated administrative offence protocol must include the following: the date and place of its creation; the name of the institution where the administrative offence report was created; information about the person being held administratively accountable; the place, time, and nature of the administrative offence; the article, part of the article, or other legal provision determining the responsibility for the offence, which the person violated; the date, time, and place of the case hearing, if known at the time of the report's creation; and any other necessary data required to resolve the case. The administrative offence protocol automatically created in the Register of Administrative Offences is not signed. In contrast, Article 609 of the Code of Administrative Offences of the Republic of Lithuania

[43] Law amending Articles 33, 38, 417, 424, 569, 573, 575, 589, 590, 595, 602, 610, 611, 612, 669, 682 and 686 of the Code of Administrative Offences of the Republic of Lithuania 2018.

specifies what should be included in a traditional administrative offence protocol. It states that the protocol must, *inter alia*, include the position, first name, and last name of the person who conducted the investigation and drafted the protocol, and that the protocol must be signed[44]. These changes to the Code of Administrative Offences of the Republic of Lithuania suggest that 'automated administrative orders' are being issued autonomously, without review by corresponding officials. Moreover, the following provisions indicated in the explanatory memorandum to the relevant amendment law support the decision to eliminate the role of the official and apply full automation in issuing administrative acts. According to the explanatory memorandum, 1) the human factor is eliminated when protocols for administrative offences are created automatically; 2) it is proposed that the administrative act and other procedural documents be automatically created in the Register of Administrative Offences, meaning procedural documents would be completed automatically by the software; and 3) protocols of administrative offences or notifications of a possible administrative offence are created in the Register of Administrative Offences automatically, meaning that proceedings for administrative offences are initiated without the presence of an official[45].

In conclusion, the amendments to the Code of Administrative Offences of the Republic of Lithuania represent a significant shift towards automation in administrative procedures. These changes, particularly to Articles 590(2) and 611, allow for the automatic initiation of administrative offence proceedings and the generation of administrative orders without human oversight.

6. The Debate on Human Oversight in 'Automated Administrative Orders'

Human oversight is crucial in automated decision-making systems, especially when they significantly impact individuals' rights and obligations. It ensures that any potential biases, errors,

[44] Law amending the articles 33, 38, 417, 424, 569, 573, 575, 589, 590, 595, 602, 610, 611, 612, 669, 682 and 686 of the Code of Administrative Offenses of the Republic of Lithuania 2018.

[45] Explanatory memorandum to the draft law amending Articles 33, 38, 417, 424, 569, 573, 575, 589, 590, 595, 602, 610, 611, 612, 669, 682 and 686 of the Code of Administrative Offences of the Republic of Lithuania No. XIIIP-2672 2018.

or ethical concerns in AI-generated decisions can be reviewed and corrected by a human, maintaining fairness and accountability. In the context of public sector decisions, including 'automated administrative orders', human oversight helps safeguard fundamental rights and prevents the misuse of technology in areas like justice and law enforcement.

The importance of human oversight in public sector decision-making has been highlighted in various EU documents. For example, back in 2016, when the General Data Protection Regulation (GDPR) was adopted, it was noted that the data subject has the right not to be subject to decisions based solely on automated processing, including profiling, that result in legal consequences or similarly significant impacts on them[46]. In October 2020, the European Parliament adopted a resolution on a Framework of Ethical Aspects of Artificial Intelligence, Robotics and Related Technologies that recommends the European Commission to propose a legislative action to harness the opportunities and benefits of AI, but also to ensure protection of ethical principles[47]. The resolution also notes that while the deployment of AI, robotics and related technologies in public authority decision-making brings benefits, it can result in grave misuse, such as mass surveillance, predictive policing and breaches of due process rights. Accordingly, Member States should have recourse to such technologies only if there is thorough evidence of their trustworthiness and if meaningful human intervention and review is possible or systematic in cases where fundamental liberties are at stake. It follows that the European Parliament encourages careful use of the opportunities offered by technology and always prioritises human rights.

In relation to the 'automated administrative orders' discussed in this article, it is important to highlight the following provisions outlined in the aforementioned European Parliament resolution: 1) any decision taken by AI, robotics, or related technologies within the framework of prerogatives of public power

[46] Article 22 of the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), 1.

[47] European Parliament, Resolution of 20 October 2020 with recommendations to the Commission on a framework of ethical aspects of artificial intelligence, robotics and related technologies (2020/2012(INL)).

should be subject to meaningful human intervention and due process; 2) technological advancement should not lead to the use of AI, robotics, and related technologies to autonomously take public sector decisions which have a direct and significant impact on citizen's rights and obligations; 3) AI should never replace humans in issuing judgments; decisions, such as granting bail or probation, that are heard in court, or decisions based solely on automated processing producing a legal effect concerning the individual or which significantly affect them, must always involve meaningful assessment and human judgement; 4) decisions made or informed by AI, robotics, and related technologies should remain subject to meaningful human review, judgement, intervention and control; 5) bias in – and discrimination by – software, algorithms, and data is unlawful and should be addressed by regulating the processes through which they are designed and deployed. From the excerpts of the European Parliament resolution mentioned above, it is clear that when a decision is made with the assistance of technology and has a direct or significant impact on individuals' rights and obligations, there must be provisions for reviewing such decisions. Moreover, the European Parliament's proposed regulation highlights high-risk uses and purposes of AI, robotics, and related technologies. Among these, particular emphasis is placed on public sector decisions that have a significant and direct effect on the rights and obligations of natural or legal persons. Even though this resolution is a source of a soft law and not legally binding, it reflects the European Parliament's concern regarding stricter regulation of technological solutions in decision-making, particularly in the public sector[48].

As there are few EU documents regarding the use of various technologies that significantly affect human rights and obligations, it is worth discussing the documents related to such AI systems. First of all, the 2019 Ethics Guidelines for Trustworthy Artificial Intelligence[49] reiterate the GDPR notion that individuals have the right not to be subject to a decision based solely on automated processing when this produces legal effects or similarly significant

[48] For further details concerning the correlation between automated administrative orders in Lithuania and the adoption by the European Parliament of a Resolution on a Framework of Ethical Aspects of Artificial Intelligence, Robotics and Related Technologies in G. Strikaitė-Latušinskaja, cit. at 20.
[49] High-Level Expert Group on AI, *Ethics guidelines for trustworthy AI* (2019).

impacts on them. In the *White Paper on Artificial Intelligence*[50], adopted in 2020, human oversight is listed among the key features that high-risk AI applications should include. In addition, the European Commission categorises AI applications as high-risk when they involve significant risks related to safety, consumer rights, and fundamental rights. AI used in the public sector is classified as high-risk due to its potential for substantial impacts on individuals. This classification is based on two criteria: the sector itself (including public services) is susceptible to significant risks, and the specific application of AI can lead to legal or material effects that are difficult for those affected to mitigate. Furthermore, the European Union Artificial Intelligence Act (AI Act) – the first comprehensive legal attempt to regulate AI worldwide – entered into force on 1 August 2024[51]. However, the application of the provisions of the AI Act, depending on the categories of AI systems, will occur on 2 August 2025 (for provisions related to general-purpose AI systems), 2 August 2026 (for provisions related to high-risk AI systems) and 2 August 2027 (for provisions related to AI systems subject to existing EU health and safety legislation). The AI Act adopts a risk-based approach. Accordingly, risk levels in AI are categorised as either unacceptable, high, limited, minimal, or zero. It should be noted that specific rules are proposed for high-risk AI systems – those that create a high risk to the health and safety or fundamental rights of natural persons. In line with a risk-based approach, these high-risk AI systems are permitted on the European market subject to compliance with certain mandatory requirements: 1) the high quality of the datasets feeding the system to minimise risks and discriminatory outcomes; 2) the logging of activity to ensure the traceability of results; 3) detailed documentation providing all the information necessary regarding the system and its purpose for authorities to assess its compliance; 4) information that is clear and sufficient for uses; 5) appropriate human oversight measures to minimise risk; 6) a high level of robustness, security, and accuracy, and an ex-ante conformity

[50] European Commission, *White Paper on Artificial Intelligence – A European approach to excellence and trust*, COM(2020) 65 final [2020].

[51] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828.

assessment.

Article 6(2) of the AI Act defines high-risk AI systems as those that can significantly affect individuals' fundamental rights or operate in sectors where legal obligations are involved. 'Automated administrative orders', which impose fines or penalties through automated data processing (such as for traffic offences), have a direct effect on individuals' legal rights. This significant influence over legal outcomes might categorise them as high-risk. Accordingly, if 'automated administrative orders' were recognised under the high-risk category, the abovementioned stricter provisions would apply. Taking into account the aforementioned legal regulations of the EU, it may be concluded that decisions based solely on automated data processing, which result in legal consequences or have a substantial impact on individuals, must always involve meaningful human evaluation, with a human ultimately making the final decision. This ensures accountability, fairness, and the protection of fundamental rights, especially in contexts where automated decisions could significantly affect people's legal standing or rights.

When evaluating whether human oversight is being properly ensured, the legal status of an 'automated administrative order' must be analysed. Administrative orders are executed on a voluntary basis. If the individual pays the fine within the specified time, the settlement is considered fulfilled. Once the individual fulfils the settlement, the administrative offence proceedings come to an end. Accordingly, considering that the administrative act cannot be appealed[52], if someone disagrees with it, they must refrain from complying with it. If the individual facing administrative liability fails to comply with the administrative order, the order is deemed invalid, and the administrative offence report is forwarded to the authority responsible for non-judicial processing of the case. After reviewing the case through non-judicial proceedings, the official in charge issues a decision, which can then be appealed in a court of first instance. In conclusion, this system balances efficiency with legal recourse, ensuring that individuals retain the right to challenge administrative decisions.

The possibility of challenging a decision before an official may provide a level of human intervention, but whether it qualifies as proper human oversight under the European approach is

[52] Article 610(4) of the Code of Administrative Offences of the Republic of Lithuania No. XII-1869 2015.

debatable. According to the European Parliament's stance on AI and automated decision-making, meaningful human oversight requires not just post-decision review but also the possibility of human intervention throughout the decision-making process, particularly for decisions that impact individuals' rights and obligations. In the case of 'automated administrative orders', the oversight mechanism may be considered insufficient if it only allows for contesting the decision after it has been made, rather than ensuring human involvement at earlier stages, as mandated by the EU. Therefore, while the ability to appeal may provide some form of legal recourse, it may not fully meet the European standard for proper human oversight.

It is highly likely that the EU will continue to address the issue of human oversight in automated decision-making systems as part of its ongoing efforts to regulate AI and protect fundamental rights. The focus will likely be on ensuring transparency, accountability, and the protection of fundamental rights, particularly in cases where automated systems could have legal consequences for individuals. Future revisions of AI regulations may place more emphasis on pre-decision human involvement rather than relying solely on post-decision challenges, to align more closely with the European Parliament's ethical guidelines. Therefore, it is quite plausible that the EU will escalate oversight requirements for automated decisions, especially in high-impact areas like justice and law enforcement.

7. Concluding Remarks

Lithuania has made significant progress in the digitalisation of its public services, achieving notable positions in international rankings that assess digital transformation. The introduction of 'automated administrative orders' in 2019 marked a major step forward in leveraging technology in the public sector, resulting in a more efficient, fair, and transparent system for handling certain administrative offences. The adoption and increasing use of offence-detection systems have led to a sharp rise in recorded offences. For instance, in 2022, there was a 65 percent increase in registered offences compared to 2020, and a 34 percent increase compared to 2021[53]. Additionally, in the first 11 months of 2023,

[53] Conclusion of the Main Committee on the draft law amending article 611 of the Code of Administrative Offenses of the Republic of Lithuania 2023 102-P- 25.

630,000 speeding offences were recorded—almost 40,000 more than during the same period the previous year—with speeding comprising almost half of all traffic offences [54].

The sheer volume of offences demonstrates that without automation, it would be impossible for human resources alone to manage and process such a vast number of cases. Automation has become indispensable to administrative proceedings in Lithuania. However, as discussed in this article, questions remain regarding whether full automation—especially when these decisions significantly affect individuals' rights and obligations—fully complies with EU legal standards regarding human oversight.

The European legal landscape continues to emphasise the importance of safeguarding fundamental rights when employing automated decision-making systems. EU regulations stress the necessity of meaningful human intervention throughout the decision-making process to protect fundamental rights and ensure fairness. As Lithuania advances its public sector's automation, it will be crucial to ensure that its systems align with evolving EU standards, particularly in areas where legal outcomes are at stake. The ongoing development of EU regulations suggests that human oversight will remain a priority, requiring countries like Lithuania to balance the benefits of automation with the need to uphold transparency, accountability, and fundamental rights. As EU regulations on AI mature, Lithuania and other Member States will likely need to revise their frameworks to incorporate more robust human oversight mechanisms.

[54] Information retrieved from the Police Department webpage, at https://policija.lrv.lt/lt/naujienos/vairuotojai-dazniausiai-nepaiso-leistino-vaziavimo-greicio/, accessed 16 July 2024.

ALGORITHMIC POLAND: TRANSFORMING PUBLIC ADMINISTRATION

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Abstract

The article aims to demonstrate how the contemporary algorithmic turn affects the legal framework and the daily operation of the administrative state in Poland. It begins by tracing the evolution of the legal framework supporting the deployment of modern technologies in government operations from the late 1990s to the present, outlining the sectors and services most impacted by digitalisation, and the corresponding scholarly debate. The discussion then provides a comprehensive overview of how automated systems, including AI-based applications, are currently employed across various sectors and programmes within Polish public administration. The article also examines practical examples of these technologies in action, showcasing notable innovations and the challenges in their implementation. Ultimately, the article offers a realistic appraisal of the prospects for the continued algorithmisation of Poland's public administration, assessing the potential for future developments.

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1. Setting the Scene: The Origins of the E-Government in Poland

The development of the Polish framework on emerging technologies in government operations began in the late 1990s and early 2000s, being motivated by the perspective of accession to the European Union. The preparations commenced shortly after the publication of the European Commission's 1994 report "Europe and the Global Information Society. Recommendations from the European Council"[1]. Having recognised the importance of modernisation and technological advancements in the public sector that would level the playing field between Poland and other member states, the first framework was established in the action programme "Goals and Directions for the Development of the Information Society in Poland" (*Cele i kierunki rozwoju społeczeństwa informacyjnego w Polsce*)[2] in 2000. One pivotal reform was the provisions that allowed remote communication with the administrative body[3] and laws on access to public information[4] and electronic signature[5]. In 2003, Polish Ministry of Science and Informatisation introduced the "Informatisation Strategy of the Republic of Poland – ePoland" (*Strategia informatyzacji Rzeczypospolitej Polskiej – ePolska*)[6] for the years 2004–2006. In 2005, the law on informatisation of the activities of entities performing public tasks[7] came into force, defining the principles of electronic

[1] R. Jedlińska & B. Rogowska, *Rozwój e-administracji w Polsce*, 123 Ekonomiczne Problemy Usług 139 (2016).

[2] Resolution of the Sejm of the Republic of Poland of 14 July 2000 on building the foundations of the information society in Poland (uchwała w sprawie budowania podstaw społeczeństwa informacyjnego w Polsce) Official Journal – Polish Monitor item 22/448.

[3] A. Zalesińska, *Wpływ informatyzacji na założenia konstrukcyjne procesu cywilnego* (2016) 3.

[4] Law of 6 September 2001 on access to public information [ustawa o dostępie do informacji publicznej], Official Journal of 2022 item 902.

[5] Law of 18 September 2001 on electronic signature [ustawa o podpisie elektronicznym], Official Journal of 2022 item 1893.

[6] Ministry of Science and Informatisation, *Strategia informatyzacji Rzeczypospolitej Polskiej – ePolska na lata 2004-2006* (December 2003), at https://www.wrotapodlasia.pl/si/dokumenty_strategiczne/polska/, accessed 30 September 2024.

[7] Law of 17 February 2005 on informatisation of the activities of entities performing public tasks [ustawa o informatyzacji działalności podmiotów realizujących zadania publiczne], Official Journal of 2022 item 307.

administration[8]. Poland has been taking successive steps to introduce technological advancements while remaining outside the list of European digitalisation leaders. In April 2006, a study commissioned by the European Commission found that most of Poland's basic public services had reached at least the level of online information[9].

The steps undertaken in the early 2010s laid out the principles for further development of policies introduced in the 2008 document "Information Development Strategy in Poland until 2013" (*Strategia rozwoju informacyjnego w Polsce do roku 2013*)[10]. The strategy was sectoral and considered the priorities of European information society policy, resulting from the Lisbon Strategy and, among other things, the "eEurope - Information Society for All" initiative[11]. During this period of Polish E-Government policy, related to the development of the infrastructure for the electronic platform for public administration services (ePUAP) emerged, enabling the implementation of standard processes for all services provided electronically[12].

The efforts to provide a robust E-Government structure for Polish citizens resulted in the promulgation of the "Integrated State Informatisation Programme for 2014–2022"[13], amended in 2016[14]

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[8] B. Kozłowska & S. Osowski, *Miejsce dla obywateli: e-administracja* (2010), at http://programrozwojubibliotek.org/wp-content/uploads/2015/07/Miejsce_dla_obywateli_e_administracja.pdf, accessed 30 September 2024, 11.

[9] D. Grodzka, *E-administracja w Polsce*, 3:19 Studia BAS 59 (2009).

[10] Ministry of Internal Affairs and Administration, *Strategia rozwoju społeczęństwa informacyjnego w Polsce do roku 201*3 (December 2008), at https://umwd.dolnyslask.pl/fileadmin/user_upload/spoleczenstwo_informacyjne/dokumenty/Zalacznik_nr_1.pdf, accessed 30 September 2024.

[11] Ministry of Internal Affairs and Administration, *Odpowiedź podsekretarza stanu w Ministerstwie Spraw Wewnętrznych i Administracji - z upoważnienia ministra – na interpelację nr 6066 w sprawie strategii budowy społeczeństwa informacyjnego* (December 2008), at https://orka2.sejm.gov.pl/IZ6.nsf/main/5FE9CBC7, accessed 30 September 2024.

[12] W. Michalski, *Rozwój usług eGovernment w świetle inicjatyw programu eEuropa i ePolska*, 3(4) Telekomunikacja i Techniki Informacyjne 49 (2007).

[13] Ministry of Digital Affairs, *Program Zintegrowanej Informatyzacji Państwa* (October 2016), at https://mc.bip.gov.pl/programy-realizowane-w-mc/program-zintegrowanej-informatyzacji-panstwa-wrzesien-2016-r.html, accessed 30 September 2024.

[14] Resolution No. 117/2016 of the Council of Ministers of September 27, 2016, amending the resolution on the adoption of the development program "Programme of Integrated State Informatisation" [uchwała zmieniająca uchwałę

and 2019[15]. The 2019 revision, published a year later, announced the preparation of a strategy for artificial intelligence (AI) development in Poland. 2023, the Polish government extended the Integrated State Informatisation Programme until 31 December 2024. In addition to projects developed by the Polish government, programmes concerning algorithmic public administration were implemented in cooperation with the European Union, such as the "European Funds for Digital Development 2021-2027" (*Fundusze Europejskie na Rozwój Cyfrowy 2021-2027*)[16].

1.1. Policy Developments Towards Using AI

With technology development, Poland saw the need to develop a strategy for using AI systems, also in public administration. The 2020 "Policy for the Development of Artificial Intelligence in Poland"[17] emphasises the importance of AI in improving government operations' efficiency. AI is viewed as a tool to support decision-making processes. However, decisions must remain under human oversight, and citizens must be informed whether a human or an algorithm made a decision.

The policy also highlights the broader societal implications of AI, particularly its ability to automate and optimise processes on an unprecedented scale[18].

w sprawie przyjęcia programu rozwoju 'Program Zintegrowanej Informatyzacji Państwa'], item RM-111-120-16.

[15] Resolution No. 109/2019 of the Council of Ministers of September 24, 2019, amending the resolution on the adoption of the development program "Programme of Integrated State Informatisation" [uchwała zmieniająca uchwałę w sprawie przyjęcia programu rozwoju 'Program Zintegrowanej Informatyzacji Państwa'], item RM-111-120-16.

[16] Fundusze Europejskie na Rozwój cyfrowy, at https://www.rozwojcyfrowy.gov.pl/, accessed 30 September 2024.

[17] Rada Ministrów, *Polityka dla rozwoju sztucznej inteligencji w Polsce od roku 2020* [Policy for the development of artificial intelligence in Poland from 2020], Załącznik do uchwały nr 196, 28 grudnia 2020 r. (poz. 23) (2020), at https://www.gov.pl/web/ai/polityka-dla-rozwoju-sztucznej-inteligencji-w-polsce-od-roku-2020, accessed 30 September 2024.

[18] Council of Ministers, *Polityka dla rozwoju sztucznej inteligencji w Polsce od roku 2020 – Załącznik do uchwały nr 196, 28 grudnia 2020 r. (poz. 23)* (December 2020), 22–23, at https://www.gov.pl/web/ai/polityka-dla-rozwoju-sztucznej-inteligencji-w-polsce-od-roku-2020, accessed 30 September 2024.

The policy sets out several key goals[19] for the development of AI in Poland, aiming to balance technological advancement with social responsibility:

1. Poland recognises AI's risks to the labour market, including potential job losses and increased inequality. The policy calls for proactive measures, such as retraining programmes and supporting workers in vulnerable industries, to help society adapt to these changes.
2. A focus on preparing workers for the future economy is central. The government aims to provide opportunities for upskilling in AI-related fields, including through the Integrated Skills Strategy 2030[20], which aligns education with emerging market trends.
3. The policy stresses the need for flexible legislation that fosters AI research, development, and innovation, which includes removing legal barriers and promoting Poland as an attractive destination for highly skilled AI professionals from domestic and international markets.
4. Poland's policy stresses the importance of trustworthy, transparent, and accountable AI and seeks to ensure that AI development is consistent with ethical standards, particularly those related to human rights.
5. The policy encourages Poland's active involvement in shaping global AI governance, mainly through collaboration with organisations like the EU, UN, and OECD, to contribute to developing ethical frameworks for the global use of AI technologies.
6. To build trust in AI technologies, the policy promotes campaigns that educate the public about the opportunities and risks of AI, helping citizens and businesses make informed decisions about their engagement with AI systems.
7. The policy outlines the importance of continuous research in AI, including promoting transparency in AI decision-making processes and supporting innovation through grants, independent audits, and assessments of AI systems' social impacts.

[19] Council of Ministers, cit. at 18, 69–73.

[20] Ministerstwo Edukacji Narodowej, *Zintegrowana strategia umiejętności 2030 (część ogólna)* (2019), at https://www.ibe.edu.pl/images/download/Zintegrowana_Strategia_Umiejętności_2030_(część_ogólna).pdf, accessed 12 September 2024.

The policy outlines steps to promote AI in public administration. It encourages the development of trustworthy AI solutions, supporting initiatives that allow the testing and implementing AI systems in various sectors such as public services and healthcare[21].

Numerous policies and programmes adopted by the Polish government contribute to Poland's position in the Digital Economy and Society Index[22], with its performance improving yearly. Poland ranks among the countries catching up most rapidly with digital transformation leaders despite ranking 24th overall among EU countries[23]. Additionally, Poland is gradually enhancing its AI potential, as indicated by the latest Global AI Index 2024[24]. In this ranking, which considers AI implementation, innovation, and investment, Poland is 36th out of 83 countries. While Poland is not yet at the forefront of AI adoption, it is trying to keep pace with other countries.

1.2. Sectors and Services Most Impacted by the Digital Turn

The integration of AI technologies is transforming multiple sectors in Poland, optimising processes, predicting outcomes, and automating tasks traditionally done by humans. The sectors most affected by the algorithmisation in Poland include public administration, healthcare, transport and logistics, agriculture, energy, education, cybersecurity, justice and law enforcement, and environmental monitoring.

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[21] F. Chiusi et alii (eds), *Automating Society Report 2020* (2020); Council of Ministers, cit. at 18, 6, 28, 70, 83.

[22] According to Article 2(1) of the Decision of 14 December 2022 establishing the Digital Decade Policy Programme 2030 'Digital Economy and Society Index' or 'DESI' means an annual set of analyses and measurement indicators on the basis of which the Commission monitors the Union's and the Member States' overall digital performance across several policy dimensions, including their progress towards the digital targets.

[23] European Commission, *European Commission Digital Decade Country Report 2023 Poland* (2023), at https://piit.org.pl/wp-content/uploads/2023/09/DDR2023_Poland_country_report.pdf, accessed September 30 2024.

[24] Tortoise Media, *The Global AI Index 2024* (2024), at https://www.tortoisemedia.com/intelligence/global-ai/#rankings, accessed September 30 2024.

In public administration, AI-driven automation improves decision-making and service delivery[25], enhancing efficiency for citizens and businesses. The most used solutions in the field of new digital technologies within central administration entities are electronic services (e-services). The key areas where e-services are applied include communication with citizens and businesses, administrative matters, and financial management[26].

Healthcare benefits from AI's use in diagnostics, telemedicine, predictive tools for epidemiological situations, optimising treatment outcomes[27], and elderly care. For example, Łódź has introduced an AI-supported telecare programme for elderly residents, monitoring vital signs and alerting caregivers in emergencies[28].

In transport, self-driving cars and AI-enabled transport systems help reduce accidents and optimise logistics[29]. AI-driven solutions, like smart traffic systems and intelligent parking management, are reducing congestion and improving public transport in cities like Warsaw, Kraków, and Łódź[30].

Agriculture also benefits from precision farming technologies that boost productivity[31], while energy management is becoming more efficient through smart grids that optimise energy use and integrate renewable energy sources[32].

AI plays a growing role in educational processes by enhancing personalised learning and skill development[33]. The reliance on algorithms to predict and mitigate risks in cybersecurity

[25] A. Kargul et alii, *W drodze ku doskonałości cyfrowej: Raport końcowy z badania rynku na temat gotowości wdrożenia, poziomu wiedzy i wykorzystania nowych technologii cyfrowych w jednostkach samorządu terytorialnego* (2020) 66–67.
[26] Ministry of Digital Affairs, *W drodze ku doskonałości cyfrowej Raport końcowy z badania rynku na temat gotowości wdrożenia, poziomu wiedzy i wykorzystania nowych technologii cyfrowych w jednostkach samorządu terytorialnego* (October 2023), 7, at https://cwd.info.pl/wp-content/uploads/2024/01/Raport_koncowy_z_badania_samorzadow_terytorialnych_Ministerstwo-Cyfryzacji.pdf, accessed 12 September 2024.
[27] Ministry of Digital Affairs, cit. at 26, 32, 69.
[28] Ministry of Digital Affairs, cit. at 26, 44–46.
[29] Ministry of Digital Affairs, cit. at 26, 32.
[30] Ministry of Digital Affairs, cit. at 26, 40–42.
[31] Ministry of Digital Affairs, cit. at 26, 32, 33.
[32] Ministry of Digital Affairs, cit. at 26, 8, 10.
[33] Ministry of Digital Affairs, cit. at 26, 74–76.

is increasing[34]. AI is used in predictive policing and managing security risks[35].

Many local governments use AI for air quality monitoring and waste management. These systems provide real-time data and help municipalities take quick action to improve environmental health[36].

1.3. Scholarly Debate on the E-Government

The Polish academic debate addresses legal, economic, and technological aspects related to E-Government. From the first steps taken by the Polish legislator in E-Government solutions, academics have identified weaknesses in the country's digital development and access to online services[37]. Scholars have observed the progress of E-Government in Poland, emphasising the need to standardise services provided by the online administration[38] and noting disparities in technological development across different administrative sectors[39]. E-Government in the context of citizens, EU values[40], challenges for digital services[41], and the potential of their use in public administration[42] have been the focus of monographs published over recent years.

The Polish scholarly community explores topics such as electronic document management[43], digitisation of postal

[34] Ministry of Digital Affairs, cit. at 26, 69.
[35] Ministry of Digital Affairs, cit. at 26, 67, 73.
[36] Ministry of Digital Affairs, cit. at 26, 42–44.
[37] D. Grodzka, cit. at 9; M. Borawski and Kesra Nermend, "Zastosowanie sztucznych sieci neuronowych do wspomagania decyzji w planowaniu wieloletnim w samorządach terytorialnych" (2005) *Prace Naukowe / Akademia Ekonomiczna w Katowicach. Systemy wspomagania organizacji SWO'2005*.
[38] R. Jedlińska & B. Rogowska, cit. at 1.
[39] D. Miłek & P. Nowak, *Rozwój usług elektronicznej administracji publicznej w Polsce na tle Unii Europejskiej*, 65 Nierówności społeczne a wzrost gospodarczy 47–73 (2021).
[40] S. Dudzik et alii (eds.), *Obywatel w centrum działań e-administracji w Unii Europejskiej* (2023).
[41] S. Dudzik et alii (eds.), *E-administracja. Wyzwania dla cyfrowych usług publicznych w Unii Europejskiej* (2024).
[42] S. Dudzik et alii (eds.) *E-administracja: skuteczna, odpowiedzialna i otwarta administracja publiczna w Unii Europejskiej* (2022).
[43] R. Raczko, *Elektroniczne zarządzanie dokumentacją w e-administracji*, 44 Roczniki Kolegium Analiz Ekonomicznych 35–43 (2017).

services[44], and the competencies of officials using technological solutions[45]. Some texts highlight the challenges of using AI in E-Government tools[46], particularly concerning the automation of decision-making processes[47].

Since 2007, the journal "IT in Administration" has been published in Poland[48]. This monthly journal is dedicated to information technologies used in the public sector, E-Administration issues, public institutions' digitalisation, and IT legal matters. The magazine targets IT specialists, network administrators in government offices and public sector entities, and officials overseeing the digitalisation of public institutions. For instance, the September 2024 issue focuses on cybersecurity, including new strategies and tools for protecting government offices.

The adoption of the Artificial Intelligence Act (AIA) generated broad interest, and its enactment is expected to spur further academic debates.

2. The EU Legal Framework for the Use of Algorithmic Automation and AI Systems by the Public Administration

In Poland, an EU Member State, the basic legal framework for developing and applying algorithmic automation and AI-based applications, including public administration, is laid down in two major European Union law acts: the General Data Protection

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[44] A. Romejko-Borkowska, *E-administracja, czyli cyfryzacja usług publicznych w Europie i w Polsce – nowa rola operatorów pocztowych?*, 1(7) internetowy Kwartalnik Antymonopolowy i Regulacyjny 89–99 (2017).

[45] P. Świtał, "Informatyzacja administracji publicznej w Polsce – wyzwania i problemy", in B. Kotowicz et alii (eds.), *Prawo publiczne i prywatne w dobie informatyzacji – ocena dotychczasowych rozwiązań i perspektywy na przyszłość* (2023) 111–130.

[46] D. Chaba, *Wykorzystywanie sztucznej inteligencji w administracji publicznej. Wybrane aspekty*, 1(24) Roczniki Administracji i Prawa (2024).

[47] J. Greser & M. Dymitruk, *Unijny projekt regulacji sztucznej inteligencji a przeciwdziałanie próbom autorytarnego jej wykorzystywania przez władze publiczne*, 20 Rocznik Problemy Współczesnego Prawa Międzynarodowego, Europejskiego i Porównawczego 235–244 (2022); M. Kamiński, *Akt administracyjny zautomatyzowany. Zasadnicze problemy konstrukcyjne zastosowania systemów sztucznej inteligencji w procesach decyzyjnych postępowania administracyjnego na tle prawnoporównawczym*, 4(47) Prawo i Więź 281–304 (2023).

[48] Miesięcznik informatyków i menedżerów IT sektora publicznego IT w Administracji, at https://itwadministracji.pl, accessed 12 October 2024.

Regulation (referred to as GDPR)[49] and the Artificial Intelligence Act (referred to as AIA)[50].

2.1. The General Data Protection Regulation

The GDPR establishes a framework for protecting personal data. It does not explicitly prohibit the use of AI in public administration but imposes rigorous requirements to ensure transparency, accountability, and the protection of individual rights.

One of the central provisions relevant to AI use is Article 22 GDPR, which grants individuals the right not to be subject to decisions based solely on automated processing, including profiling when such decisions produce legal effects or significantly affect them. This indicates that public administration cannot entirely rely on AI or automated systems to make decisions regarding citizens without human involvement unless specific conditions are met. Such exceptions include instances where the decision is indispensable for the fulfilment of a contract, is authorised by law, or is based on the individual's explicit consent. Nevertheless, safeguards, such as the right to human intervention and the right to challenge decisions, are imperative even in such instances.

The GDPR also reiterates the fundamental tenets of data processing outlined in its Article 5. It is incumbent upon public administrations to employ AI to guarantee that personal data processing is conducted according to lawfulness, fairness, and transparency. These principles mandate that citizens be informed when automated systems utilise their data and that such data processing be consistent with legal requirements. Moreover, the principle of data minimisation requires that only the data necessary for processing be collected and that the accuracy of the data be maintained to prevent errors or biases in decision-making processes.

Another noteworthy provision is Article 35 GDPR, which mandates that public administrations undertake Data Protection Impact Assessments (DPIA) when the deployment of AI is likely to result in substantial risks to individuals' rights and freedoms. To

[49] Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data.
[50] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence.

illustrate, if a municipality introduces an AI-driven welfare distribution system, an assessment of the potential risks of discrimination or bias must be conducted prior to the deployment of the system. Similarly, Article 6 GDPR stipulates that the processing of personal data must be based on a legitimate legal basis, such as compliance with a legal obligation or the fulfilment of a task in the public interest. Transparency is also reinforced by Article 13 GDPR, which obligates public bodies to provide clear information regarding the use of AI in automated decision-making processes. Citizens must be informed about the rationale of decisions and their potential consequences. This guarantees that AI systems employed in public administration are utilised transparently and comprehensively, thereby facilitating citizens' ability to understand and, if necessary, contest the decisions made by such systems. Furthermore, Article 24 GDPR stipulates that public administrations must guarantee compliance with the GDPR by implementing suitable technical and organisational measures, including regular audits, encryption, and anonymisation.

2.2. The Artificial Intelligence Act

The AI Act (AIA) supplements the GDPR by introducing a series of regulations tailored to AI, particularly in areas deemed to present a heightened level of risk. The AIA aims to establish a comprehensive regulatory framework for AI systems, in particular those relevant to public administrations across EU Member States.

The AIA classifies AI systems according to their potential impact on fundamental rights. Specific applications, such as real-time biometric identification in public spaces, are explicitly prohibited unless subject to rigorous oversight. Public administration bodies that deploy AI systems in areas such as public benefits administration, law enforcement, or critical infrastructure must comply with strict obligations. These measures include performing risk assessments, implementing human oversight, and registering high-risk AI systems in a public database managed by the European Commission.

Public authorities must inform individuals when high-risk AI systems influence decisions and justify how these systems contributed to the decision-making process. The AIA delineates a series of governance and compliance mechanisms, including establishing national supervisory authorities to oversee the use of AI. It introduces provisions for public administrations to conduct

experiments with AI in controlled environments designated as "regulatory sandboxes", permitting the secure testing of AI systems under qualified personnel's supervision and guaranteeing that ethical and legal standards are met before the technology's broader deployment.

Public administrations in Poland and throughout the EU must conduct *ex-ante* risk assessments to evaluate the potential impact of AI systems, particularly in domains such as healthcare, education, and social services.

3. The Polish Legal Framework for the Use of Algorithmic Automation and AI Systems by the Public Administration

Poland does not yet have a specific legal framework directly permitting or prohibiting the use of AI systems and algorithmic automation by public administration. The legal requirements combine preexisting norms with new, technologically oriented rules. Additionally, Article 7 of the Polish Constitution[51] stipulates that public authorities must act based on and within the limits of the law[52].

3.1. The 1960 Code of Administrative Procedure

The amendment of Article 14 of the Code of Administrative Procedure[53], which allows for the electronic submission of applications and service via electronic means under the Law on informatisation of the activities of entities performing public tasks, is considered a pivotal step in developing E-Government tools[54]. The question of developing legal instruments in public administration has been the subject of several amendments in the

[51] Constitution of the Republic of Poland [Konstytucja Rzeczypospolitej Polskiej], Official Journal of 1997 item 78.483.

[52] M. Florczak-Wątor, *Artykuł 7*, in P. Tuleja (ed.), *Konstytucja Rzeczypospolitej Polskiej. Komentarz* (2023); M. Zubik & W. Sokolewicz, *Article 7*, in L. Garlicki (ed.), *Konstytucja Rzeczypospolitej Polskiej. Komentarz* (2016).

[53] Law of 14 June 1960 code of administrative procedure [kodeks postępowania administracyjnego], Official Journal of 2024 item 572.

[54] M. Kotulska, *Wykorzystanie środków komunikacji elektronicznej w postępowaniu administracyjnym*, 9 Przegląd Prawa Publicznego 23 (2012).

last two decades[55], particularly the Law on Electronic Delivery[56]. The amended provision abolished the dualism of written and electronic document forms by assuming that matters shall be heard and disposed of in writing and recorded in paper or electronic form, making them alternative choices[57]. The new regulations allow matters to be handled using official documents generated automatically and bearing the qualified electronic seal of the public administration authority, as well as online services made available by public administration bodies after a party or other participant in the proceedings has authenticated them. The provision demonstrates the Polish legislator's willingness to open the procedure to the automation of the administrative process, provided that the substantive law introduces a basis for this[58].

3.2. Specific Regulations on Digital Tools Used by Public Administration

The tools based on digital solutions used by Polish public administration are governed either by separate laws or are integrated into the regulations about specific public institutions. Examples of the Polish framework for emerging technologies in government operations include the mCitizen app (*mObywatel*), the Electronic Platform for Public Administration Services (*Elektroniczna Platforma Usług Administracji Publicznej – ePUAP*), the Public Information Bulletin (*Biuletyn Informacji Publicznej*), the E-Tax Office (*e-Urząd Skarbowy*), and the Central Business Activity Register and Information (*Centralna Ewidencja Działalności Gospodarczej*).

One of the most noteworthy E-Government tools is the mCitizen (mObywatel) app. The mCitizen app was launched in

[55] A. Wróbel, *Artykuł 14*, in M. Jaśkowska et alii (eds.), *Kodeks postępowania administracyjnego. Komentarz aktualizowany* (2024).
[56] Law of 18 November 2020 on electronic delivery [ustawa o doręczeniach elektronicznych], Official Journal of 2023 item 285.
[57] A. Wróbel, cit. at 55.
[58] G. Sibiga, *Zasada wykorzystania pism generowanych automatycznie do załatwienia indywidualnej sprawy administracyjnej (art. 14 § 1b KPA). Podstawa prawna czy zasada kierunkowa dla automatycznego podejmowania decyzji?*, 6 Informatyzacja ogólnego postępowania administracyjnego 2023, Dodatek Specjalny do Monitora Prawniczego 2023 10–11 (2023).

October 2017[59] and operated as one of the public mobile applications based on the Law on the digitalisation of entities performing public tasks and the Law on access to public information[60]. In 2023, alongside the new legislation[61], mCitizen 2.0 was launched, integrating more digital administration solutions. This Act established the legal framework for the app's operation, including its new identity verification and authentication tools. The new Law comprehensively regulates the functioning of the mCitizen app and the conditions for providing and delivering its services[62].

Other tools include the ePUAP, the Public Information Bulletin, the E-Tax Office and the Central Business Activity Register and Information.

The ePUAP is an IT system where public institutions provide services through a single access point on the Internet. The platform is regulated by the Law on computerisation of activities of entities performing public tasks. The legal framework for the platform is rudimentary: it only briefly specifies that information about electronic inbox addresses provided by public entities is available on the platform, the terms of use are outlined in secondary legislation, and the methods for identification and authentication are only partially regulated[63]. The platform's operation oversees the minister responsible for digitalisation, who is also responsible for defining the scope and terms of use through regulations.

The Public Information Bulletin (*Biuletyn Informacji Publicznej*) is an ICT-based publication platform operating as a unified system of websites[64]. Public authorities and other entities must create their own Public Information Bulletin website. The

[59] Ministry of Digital Affairs, *Wystartowała aplikacja mObywatel* (October 2017), at https://www.gov.pl/web/cyfryzacja/oficjalna-premiera-aplikacji-mobywatel-transmisja-online, accessed 12 October 2024.

[60] A.A. Kania et alii, *Zasady wydawania dokumentów i udostępniania danych w ramach rejestrów publicznych* (2024) 201; A. Gryszczyńska et alii (eds.), *Internet Hacking* (2023).

[61] Law of 26 May 2023 on mCitizen app [ustawa o aplikacji mObywatel], Official Journal of 2024 item 307.

[62] A.A. Kania et alii, cit. at 60.

[63] G. Szpor & K. Wojsyk, *Artykuł 19(a)*, in C. Martysz et alii (eds.), *Ustawa o informatyzacji działalności podmiotów realizujących zadania publiczne. Komentarz* (2015).

[64] A. Mika, *Znaczenie Biuletynu Informacji Publicznej w zapewnieniu jawności działań administracji publicznej na przykładzie zamówień publicznych*, 323 Wydawnictwo Uniwersytetu Wrocławskiego 278 (2017).

Bulletin was introduced by a 2001 Law on access to public information, reflecting forward-thinking and innovative insight. At that time, Internet access in Poland was limited, and most public offices still needed websites[65]. The legislator has introduced a minimum content standard, and maintaining a website has become a legal obligation[66].

The Law on the National Tax Administration regulates the E-Tax Office (*e-Urząd Skarbowy*)[67]. Provisions for the e-Office were introduced in 2022 by the Law on Amending Certain Laws to Automate the Handling of Certain Matters by the National Tax Administration[68]. Detailed rules for the operation of the e-Office were included in nine implementing acts to the Law promulgated since 2021.

The Central Business Activity Register and Information (*Centralna Ewidencja Działalności Gospodarczej*) has been operating in the Polish legal system under the amendments introduced to the Law on Freedom of Economic Activity[69] in 2011[70]. The creation of the Central Register and Information on Economic Activity was inspired by the Central Information of the National Court Register[71].

The specifics of these systems will be analysed below.

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[65] K. Izdebski, *Artykuł 8*, in A. Piskorz-Ryń et alii (eds.) *Ustawa o dostępie do informacji publicznej. Komentarz* (2023).

[66] I. Kamińska & M. Rozbicka-Ostrowska, *Artykuł 8*, in I. Kamińska & M. Rozbicka-Ostrowska (eds.), *Ustawa o dostępie do informacji publicznej. Komentarz* (2015).

[67] Law of 16 November 2016 on the National Tax Administration [ustawa o Krajowej Administracji Skarbowej], Official Journal of 2023 item 615.

[68] Law of 8 June 2022 on amending certain laws to automate the handling of certain matters by the National Tax Administration [ustawa o zmianie niektórych ustaw w celu automatyzacji załatwiania niektórych spraw przez Krajową Administrację Skarbową], Official Journal of 2022 item 1301.

[69] Law of 2 July 2004 on freedom of economic activity [ustawa o swobodzie działalności gospodarczej], Official Journal of 2017 item 2168.

[70] Law of 13 May 2011 on law amending the law on freedom of economic activity and certain other acts [ustawa o zmianie ustawy o swobodzie działalności gospodarczej oraz niektórych innych ustaw], Official Journal of 2011 item 131.764.

[71] A. Żywicka, *Artykuł 1*, in M. Wierzbowski (ed.), *Konstytucja biznesu. Komentarz* (2015).

3.3. Cybersecurity

Under the current Law on National Cybersecurity System[72], adopted in 2018 to implement the NIS Directive[73], public administration is not explicitly covered by the cybersecurity obligations that apply to operators of essential services (e.g., energy, transport, healthcare) and digital service providers. This regulatory gap leaves public administration entities, which handle vast amounts of sensitive data through AI systems, without mandatory cybersecurity standards. However, the upcoming amendments to the National Cybersecurity System Law[74], which will transpose the NIS2 Directive[75] into Polish law, will fill this gap. The draft amendment to the Law on the National Cybersecurity System (UKSC) of October 2024 introduces significant changes for public administration bodies, placing them under stringent cybersecurity obligations[76].

One of the most distinctive features of the draft amendment is the procedure for designating high-risk suppliers (*Dostawca Wysokiego Ryzyka*, DWR), which is particularly relevant for suppliers of AI systems and ICT infrastructure. Under Article 71(2) UKSC, the Minister for Cybersecurity, in collaboration with the pertinent CSIRT teams, is empowered to categorise a supplier as high-risk if their systems, services, or software present a substantial risk to the security of the public or critical infrastructure. It implies that if an AI system provider is classified as a high-risk supplier,

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[72] Law of 5 July 2018 on National Cybersecurity System [ustawa o krajowym systemie cyberbezpieczeństwa], Official Journal of 2018 item 1560.

[73] Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union.

[74] Ministerstwo Cyfryzacji, *Projekt ustawy z dnia 23 kwietnia 2024 r. o zmianie ustawy o krajowym systemie cyberbezpieczeństwa oraz niektórych innych ustaw* (2024), at https://mc.bip.gov.pl/projekty-aktow-prawnych-mc/902927_projekt-ustawy-o-zmianie-ustawy-o-krajowym-systemie-cyberbezpieczenstwa-oraz-niektorych-innych-ustaw.html, accessed 12 September 2024.

[75] Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union, amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and repealing Directive (EU) 2016/1148 (NIS 2 Directive).

[76] Ministry of Digital Affairs, *Projekt ustawy o zmianie ustawy o Krajowym Systemie Cyberbezpieczeństwa oraz niektórych innych ustaw* (October 2024), at https://mc.bip.gov.pl/projekty-aktow-prawnych-mc/902927_projekt-ustawy-o-zmianie-ustawy-o-krajowym-systemie-cyberbezpieczenstwa-oraz-niektorych-innych-ustaw.html, accessed 12 September 2024.

public administration bodies may be obligated to terminate their use of that supplier's products or services, irrespective of any existing contractual obligations. This introduces an additional layer of scrutiny, particularly for AI systems that process sensitive personal data or are integrated into critical government operations and indicates Poland's focus on securing the supply chain, with an emphasis on limiting exposure to foreign or untrusted suppliers, which aligns with broader European concerns about national security risks posed by non-EU providers.

Article 22(1) UKSC draft amendment establishes a maximum fine of PLN 100 million (approximately EUR 22 million) for public bodies that fail to comply with cybersecurity obligations. The maximum fine is notably more stringent than the general penalties in the NIS2 Directive, reflecting Poland's rigorous approach to enforcing cybersecurity standards, particularly in the public sector, where AI systems are becoming increasingly prevalent in sensitive decision-making processes.

Integrating AI systems into public administration increases the necessity for robust cybersecurity. The NIS2 Directive, as implemented through the UKSC amendment, provides a crucial legal framework for managing these risks. AI systems are particularly susceptible to specific forms of cyberattacks, including adversarial attacks. In such attacks, minor alterations to the input data can result in significant and often detrimental modifications to the system's output.

By extending the obligations outlined in the NIS2 Directive to public administrations and focusing specifically on the security of AI systems, the Polish government aims to ensure that these technologies can be safely deployed to improve governance without compromising security or public trust.

4. Algorithms in the Daily Operations of Public Administration

Poland's public administration steadily incorporates AI systems and algorithmic automation. Some digital services have introduced AI-driven tools to streamline central administration services, enhance transparency, and improve citizen engagement. These applications enable efficient access to public information, facilitate digital communication between citizens and government entities, and offer innovative solutions to deliver services more

effectively in urban and rural areas. At the same time, local government administration in larger urban areas tends to be at the forefront of AI integration, while smaller municipalities face more significant challenges in adopting these technologies.

4.1. Algorithmic Automation and AI-based Applications in Central Administration

Most central administrative bodies (82 per cent) utilise digital technology solutions, such as those based on AI, the Internet of Things (IoT), cloud computing, and electronically delivered services (e-services). Notably, 90 per cent of these bodies specifically report using e-services. Those administrative units not employing digital technology solutions cited the lack of identified need in this area as the primary reason for non-adoption[77].

(a) Algorithmisation of Polish Ministries

The issues covered in this section were the subject of our survey. On 1 October 2024, a co-author of this article, Prof. Monika Namysłowska, submitted public information requests to all 19 ministries and 3 offices: the Personal Data Protection Office, the Office of Competition and Consumer Protection, and the Electronic Communications Office. Within the statutory 14-day period from submitting the request, 2 ministries did not respond[78], and 7 other ministries[79] requested an extension of the deadline by 2 to 6 weeks to gather and analyse the relevant information. Only the Personal Data Protection Office stated that all the information covered by the request does not constitute public information.

In most responses within the statutory deadline, the ministries claimed not to use algorithmic automation or AI-based systems in their daily operations. The Electronic Communications Office responded that it does not use these solutions. Still, it does use iris scanners and fingerprint readers as part of a control system to restrict access to protected areas for unauthorised persons on the Office's premises. The responses also seem to omit other systems, such as those described in Section IV or, for example, EZD RP

[77] Ministry of Digital Affairs, cit. at 26, 8–9.
[78] Ministry of Industry, Ministry of Justice.
[79] Ministry of the Interior and Administration, Ministry of National Defense, Ministry of Finance, Ministry of Higher Education and Science, Ministry of Climate and Environment, Ministry of Foreign Affairs, Ministry of Sport and Tourism.

(Electronic Document Management System). This system streamlines document management and enables the comprehensive handling and resolution of cases in electronic form while supporting paper-based case handling. The EZD RP system includes a data anonymisation module based on AI solutions[80].

During the examined period specified by the statutory deadline (1–15 October 2024), one ministry, the Ministry of Development and Technology, provided a comprehensive response. It indicated that its IT Office uses AI mechanisms in the Ministry's cybersecurity systems, including processes for detecting anomalies within the IT ecosystem and advanced protection of its computing resources. The Department of Digital Economy (DGC) also uses an external security system—Web Application Firewall-class Internet Threat Protection. These protections employ machine learning algorithms to detect and block suspicious traffic and identify system anomalies. Moreover, DGC utilises external solutions based on advanced algorithms such as chatbots and voicebots. These solutions use advanced NLP (Natural Language Processing) models, enabling citizen service in a 24/7 mode. According to the Ministry, NLP algorithms allow for the automation of citizen interactions intuitively and naturally, providing real-time responses. These systems are applied in customer support, handling inquiries, and providing information and are used within the FENG and CPP projects.

The Office of Competition and Consumer Protection (UOKiK) also responded comprehensively. In addition to information on the ARBUZ system (see Section 5 below), it indicated that the President of UOKiK uses software that employs algorithmic automation or AI, specifically the EU program "eSurveillance – Product Safety". This application was developed by the European Commission and is accessible through a secured website. The application uses AI algorithms to search websites for offers of products deemed dangerous and previously reported in the EU system "Safety Gate – RAPEX". Additionally, the President of UOKiK has access to programs that utilise artificial intelligence, such as ChatGPT, HappyScribe, Canva, Photoshop, FreePik, DeepL, and Google Translate. In monitoring the press, the President employs ready-made AI-based solutions that enable the analysis of materials related to UOKiK and the Trade Inspection.

[80] See https://www.gov.pl/web/ezd-rp, accessed 2 October 2024.

(b) Access to Public Information

Maintaining the Public Information Bulletin, the official system of unified public records online, is the duty of entities to provide public information. It is also a crucial component of access to public information[81]. The data is available continuously and free of charge through the main website, http://www.bip.gov.pl, as well as through individual pages managed by public administration bodies, local government units, and other entities obligated to provide public information[82]. The entities such as municipal offices, courts, or utility companies publish information required by Polish law, including their legal status, scope of activity and competencies, governing bodies and officials, assets, procedures, methods for handling cases, and details about registers, records, and archives, along with rules for accessing the data contained in them[83].

The concept behind creating the main page was to establish a unified system of websites, all accessible through a central address book[84]. A vital advantage of the Public Information Bulletin system is its user-friendly interface and easy access from any internet-connected device[85]. The Public Information Bulletin ensures the origin of the information as it must be published on the entity's website by authorised individuals, with the content secured against third-party interference[86].

(c) E-Government Infrastructure

The largest e-service portal in Poland is the Electronic Platform for Public Administration Services (ePUAP). This platform integrates various administrative services, enabling them to be conducted electronically, thereby reducing the need for physical interactions with public offices. The primary goal of ePUAP was to streamline the functioning of public administration at different levels and adapt it to the growing expectations of

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[81] B. Wilk, *Prawne i praktyczne aspekty udostępniania informacji w Biuletynie Informacji Publicznej* (2020).
[82] A. Mika, cit. at 64, 278.
[83] Public Information Bulletin, *Czym jest BIP*, at https://www.gov.pl/web/bip/czym-jest-bip, accessed 10 October 2024.
[84] K. Izdebski, *Artykuł 9*, in A. Piskorz-Ryń *et alii* (eds.), cit. at 65.
[85] A. Mika, cit. at 64, 278.
[86] K. Izdebski, cit. at 84.

citizens and businesses regarding speed and service accessibility[87]. It also serves as a communication channel among various public administration entities. The service providers include public administration bodies and other entities tasked with carrying out public duties delegated or entrusted to them[88].

The ePUAP was launched in 2008. Since 2009, an updated system ePUAP2, has been implemented. It significantly expanded the platform's functionality, notably by introducing the "trusted profile"—a free alternative to a qualified electronic signature. The trusted profile allows for the electronic authorisation of documents, eliminating the need for in-person office visits and contributing to the increased efficiency of administrative processes[89]. In addition to simplifying communication with the administration, the platform supports data exchange between public institutions through the *Central Document Template Repository* (CRD). This repository ensures uniformity of documents, accelerating the introduction of new services and reducing operational costs[90]. By April 2015, public entities had uploaded 2.146 document templates to the Central Repository of Document Templates[91], allowing users to send documents to any office. The platform also provides integrated access to various electronic public services, centralises standard electronic document templates used in administrative procedures, and enhances interoperability among the state's automatic and AI-based systems[92].

Both the Electronic Services Platform of the Social Insurance Institution (*Platforma Usług Elektronicznych Zakładu Ubezpieczeń Społecznych – PUE ZUS*) and the Internet Patient Account (*Internetowe Konto Pacjenta – IKP*) offer access to essential public services in a similar way that electronic Platform for Public Administration Services does. PUE ZUS allows users to interact with the Social Insurance Institution by viewing collected data, submitting insurance documents, filing applications, receiving

[87] G. Michalczuk & A. Zalewska-Bochenko, *Platforma e-PUAP jako przykład elektronizacji usług administracji publicznej dla ludności*, 450 Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu 391 (2016).
[88] Electronic Platform for Public Administration Services, *Co to jest ePUAP*, at https://epuap.gov.pl/wps/wcm/connect/epuap2/PL/Strefa+Klienta_Pomoc/Co+to+jest+ePUAP/, accessed 10 October 2024.
[89] G. Michalczuk & A. Zalewska-Bochenko, cit. at 87, 394.
[90] G. Michalczuk & A. Zalewska-Bochenko, cit. at 87, 393–395.
[91] G. Szpor & K. Wojsyk, cit. at 63.
[92] Electronic Platform for Public Administration Services, cit. at 88.

responses, asking questions, and scheduling appointments at the offices[93]. Similarly, the Internet Patient Account streamlines healthcare management by organising medical information in one place, enabling patients to easily access digital health services and keep track of their health records[94].

Another tool used in Poland is the Central Business Activity Register – an electronic register of entrepreneurs operating in Poland. It allows users to establish a company, change data in the entry, and suspend, resume, or close a business[95]. The Central Business Activity Register and Information replaced previous business activity registers kept by local authorities[96]. The portal contains one simple, integrated form for the Central Business Activity Register entry application. The portal allows users to access a search engine for companies and individuals who run businesses in Poland, information on concessions, licenses, permits and entries in the register of regulated activities, as well as step-by-step instructional videos showing how to complete the registration application[97]. Polish entrepreneurs frequently use the portal. In September 2024 alone, 24,635 applications for business establishment were received, of which 1.517 were submitted online via the Central Business Activity Register[98].

The E-Tax Office is a system of the Ministry of Finance that provides citizens and businesses with effective online tools for the comprehensive handling of matters, mainly in VAT, PIT and CIT. It facilitates the fulfilment of tax obligations, including tax payment,

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[93] Tax Office in Przasnysz, *Platforma Usług Elektronicznych ZUS (PUE ZUS)* (July 2023), at https://www.mazowieckie.kas.gov.pl/urzad-skarbowy-w-przasnyszu/wiadomosci/komunikaty/-/asset_publisher/ic7Q/content/id/12628638/, accessed 10 October 2024.

[94] e-Health Centre, *Internetowe Konto Pacjenta* (September 2019), at https://pacjent.gov.pl/internetowe-konto-pacjenta, accessed 10 October 2024.

[95] Ministry of Development and Technology, *Centralna Ewidencja i Informacja o Działalności Gospodarczej – portal informacyjny* (September 2022), at https://www.gov.pl/web/gov/centralna-ewidencja-dzialalnosci-gospodarczej---portal-informacyjny, accessed 11 October 2024.

[96] A. Żywicka, cit. at 71.

[97] Ministry of Development and Technology, cit. at 95.

[98] Open Data, *Liczba wniosków o założenie działalności gospodarczej online 2024.09* (October 2024), at https://dane.gov.pl/pl/dataset/745,informacja-o-liczbie-wnioskow-zozonych-w-ceidg/resource/61311/table, accessed 7 October 2024; Open Data, *Liczba wniosków złożonych we wrześniu 2024 r.* (October 2024), at https://dane.gov.pl/pl/dataset/745,informacja-o-liczbie-wnioskow-zozonych-w-ceidg/resource/61310/table, accessed 7 October 2024.

through an online payment service[99]. The system also automatically handles certain types of cases, such as issuing certificates of non-default in taxes[100]. What is more, the National Tax Administration authorities use two other digital systems: the Central Tax Data Register (*Centralny Rejestr Danych Podatkowych*) and the Fiscal and Customs Electronic Services Platform (*Platforma Usług Elektronicznych Skarbowo-Celnych*).

(d) M-Government

In striving towards digitalising the public sector, Poland's approach to mobile government (mGovernment), defined as government tools widespread use of mobile devices and applications to enable rapid communication and response between citizens and public sector authorities[101], has been substantial. The prime example of this endeavour is the mCitizen app, created by the Research and Academic Computer Network (*Naukowa i Akademicka Sieć Komputerowa – Państwowy Instytut Badawczy – NASK*)[102] and being developed at the Central IT Center under the commission of the Ministry of Digital Affairs.

The mCitizen app allows users to create "wallets" of personal documents, simplifying interactions with Polish public administration[103]. One of the app's key features is the mID (mDowód), an electronic identity document as valid as a physical ID card. It has a separate series, number, and expiration date[104]. All public and financial institutions must accept the mID presented in the mCitizen app. The only exceptions where the mID is not equivalent to a traditional ID are crossing borders and applying for a new ID card[105].

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[99] E-Urząd Skarbowy, at https://www.gov.pl/web/finanse/e-urzad-skarbowy, accessed 7 October 2024.

[100] K. Teszner, *Artykuł 35*, in A. Melezini (ed.), *Ustawa o Krajowej Administracji Skarbowej. Komentarz* (2024).

[101] K. Erturk et alii, *Trends in E-Governments: From E-govt to M-govt*, 28 World Applied Sci. J. 66 (2013).

[102] mCitizen, *Pytania i odpowiedzi*" (2024), at https://info.mobywatel.gov.pl/pytania-odpowiedzi, accessed 7 October 2024.

[103] M. Grabowska, *Koncepcja jednolitego portalu e-Government dla obywatela w Polsce*, in S. Dudzik et alii (eds.), cit. at 40, 112.

[104] mCitizen, *Dokumenty mDowód* (2024), at https://info.mobywatel.gov.pl/dokumenty/mdowod, accessed 7 October 2024.

[105] Ministry of Digital Affairs, *Nowa jakość cyfrowych usług publicznych – startuje mObywatel 2.0* (July 2023), at https://www.gov.pl/web/cyfryzacja/nowa-

The mCitizen app provides services that enable users to access and manage their personal data from public and private registers, such as legal information or identification of associated items, as well as data related to minors under their guardianship. Users can store, present, or share this information and digital documents for verification, use the mCitizen profile and documents, authenticate with a trusted profile, and make electronic payments for services[106]. This app gives Polish citizens access to driver's licenses, data on vehicles registered in Poland, drug prescriptions, and school and professional ID cards. Ukrainian citizens who crossed the Polish-Ukrainian border after 24 February 2022 have access to an electronic document[107]. The mCitizen also logs in to other e-Government services and governmental online forms[108].

Since the introduction of the digital ID, nearly 5.1 million Poles have downloaded the mID, including over 600.000 people who had not previously used the mCitizen app[109].

(e) Automation of Administrative Processes

The ARBUZ system, used by the Office of Competition and Consumer Protection (UOKiK), is an AI-based tool designed to help detect unfair clauses in consumer contracts. The project was carried out between 2020 and 2022. The contractor for the ARBUZ system was the Information Processing Center – National Research Institute, which currently maintains it[110].

ARBUZ exemplifies the modern use of AI technology in consumer protection[111]. Its core functionality is the semantic analysis of contract terms to detect potentially unfair clauses that

jakosc-cyfrowych-uslug-publicznych--startuje-mobywatel-20, accessed 12 October 2024.

106 A.A. Kania et alii, cit. at 60.

107 mCitizen, *Dokumenty DIIA* (2024), at https://info.mobywatel.gov.pl/dokumenty/diia, accessed 12 October 2024.

108 Ministry of Digital Affairs, *mObywatel w przeglądarce* (2024), at https://www.gov.pl/web/eplatnosci/lista-urzedow-w-programie, accessed 13 October 2024.

109 Ministry of Digital Affairs, *Ponad 5 mln Polaków korzysta z mDowodu* (November 2023), at https://www.gov.pl/web/cyfryzacja/ponad-5-mln-polakow-korzysta-z-mdowodu, accessed 13 October 2024.

110 The response provided by UOKiK on 14 October 2024 to the request for public information.

111 P. Adamczewski et alii, *Advancing Consumer Law Enforcement with Artificial Intelligence: The ARBUZ System* (2024).

infringe on consumers' rights and are contrary to good practices[112]. A key advantage of ARBUZ is its ability to automatically process large amounts of data, accelerating the analysis and identification of irregularities[113]. The system detects abusive clauses using modern deep learning solutions (transformer-type neural networks)[114].

The system, powered by a database of examples of prohibited contract clauses and court decisions, evaluates the probability that a contract clause is prohibited by law and provides a rationale based on similar cases from its database. If the indication is around 80 per cent, it is a strong signal for UOKIK employees to scrutinise the result. The UOKIK employee then analyses the system's suggestions and assesses whether a clause at issue could be regarded as unfair. Based on this final evaluation, which provides new training data for ARBUZ, it is possible to initiate proceedings in which a particular contract term can be recognised as unfair or take other actions, such as issuing a "soft warning" to the business deploying such contract terms for further clarification. One highly useful feature of the system is its ability to generate soft warning documents.

Recent examples of actions using this AI-based system include the preliminary analysis of terms and conditions used by businesses in the senior care, real estate development, and energy sectors. ARBUZ also features a module that scans websites and analyses available contract terms, identifying potentially unfair clauses[115].

(f) Other Systems

Based on the 2023 report, 21 per cent of central public administration bodies in Poland utilise IoT-based solutions. They are employed to enhance environmental monitoring, aiding in managing adverse weather conditions. A prime example is the "Air Quality Monitoring System" developed by the Environmental Protection Agency, which collects air quality data from sensors

[112] Substantive criteria for the assessment of contract terms are derived from the Polish Civil Code of 1964, Official Journal No. 16, Pos. 93 with subsequent amendments.
[113] P. Adamczewski et alii, cit. at 111, 7–8.
[114] The response provided by UOKiK on 14 October 2024 to the request for public information.
[115] P. Adamczewski et alii, cit. at 111, 8–9.

placed at critical locations in each voivodeship (highest-level administrative division of Poland), allowing for real-time data analysis. IoT also monitors water pollution, soil quality, urban noise, and waste management. Monitoring road conditions and traffic flow, including public transport, as well as the status of parking facilities, are also key areas where IoT-based technologies are applied. In the healthcare sector, these technologies facilitate public health monitoring, for instance, by collecting data on infectious diseases and identifying areas with the highest infection rates.

The least frequently utilised technologies in central administration are virtual and augmented reality (7 per cent), blockchain (5 per cent), and the metaverse (2 per cent)[116].

4.2. Algorithmic Automation and AI-based Applications in Local Government Administration

According to a report on local government units in Poland, around 47 per cent of local governments use at least one form of digital technology, including AI, IoT, or e-services. In 2022, 49.3 per cent of public administration units declared the purchase of cloud computing services. The results show that government units used cloud services more often than local governments (76.4 per cent and 48.2 per cent, respectively)[117]. However, AI is mainly utilised in limited experimental capacities rather than fully integrated into day-to-day operations. AI systems are primarily employed to improve administrative processes, enhance decision-making, and support smart city infrastructure. Municipalities are increasingly adopting AI, which is far more prevalent in large cities with better infrastructure and greater resource access[118].

Several cities have incorporated AI into smart city frameworks. Gdynia has employed AI during the COVID-19 pandemic for public safety monitoring. The system uses AI to analyse surveillance camera footage to detect gatherings violating

[116] Ministry of Digital Affairs, cit. at 26, 13.
[117] Główny Urząd Statystyczny, *Społeczeństwo informacyjne w Polsce w 2023 r.* (October 2023), 64, at https://stat.gov.pl/obszary-tematyczne/nauka-i-technika-spoleczenstwo-informacyjne/spoleczenstwo-informacyjne/spoleczenstwo-informacyjne-w-polsce-w-2023-roku,2,13.html, accessed 30 September 2024).
[118] A. Kargul et alii, cit. at 25, 7–10.

health regulations[119]. Similarly, Wrocław has implemented an AI-driven system for monitoring illegal waste disposal. The system relies on drones to capture aerial footage, which is then analysed by AI algorithms to identify unauthorised dumping sites, such as abandoned tyres or hazardous materials. The system has allowed the city to improve waste management and environmental protection[120].

AI-driven technologies have been employed to manage traffic congestion and improve urban mobility in cities like Łódź and Poznań. These cities utilise Intelligent Transport Systems, which use AI to analyse real-time traffic data and adjust traffic signals dynamically, reducing congestion and optimising road use[121]. Furthermore, intelligent street lighting systems are in place in some cities to adjust lighting based on pedestrian and vehicle traffic, which improves energy efficiency and road safety[122].

AI is also transforming how public administration interacts with citizens. For instance, Kraków has implemented a Virtual Clerk (Wirtualny Urzędnik). This AI-powered chatbot assists residents in accessing city services, answering queries, and providing information about local events and administrative processes. This AI-driven tool enhances customer service and reduces the administrative burden on human clerks[123].

Another example is Gdynia's automation of various municipal services, where residents can access over 170 services online with AI support. The system assists with everything from filling out forms to navigating service portals[124].

Some municipalities, such as the city of Łódź, are planning further integration of AI systems within their daily operations. In the last trimester of 2024 and the first trimester of 2025, the city is bound to implement two new digital projects. The first is an interactive knowledge hub for employees – an AI-powered assistant that would guide the officers through the administrative procedures, providing in-depth training. The city of Łódź is also developing an AI system that would assist in drafting

[119] A. Kargul et alii, cit. at 25, 13-15.
[120] A. Kargul et alii, cit. at 25, 13–15.
[121] A. Kargul et alii, cit. at 25, 13–15.
[122] A. Kargul et alii, cit. at 25, 15–16.
[123] A. Kargul et alii, cit. at 25, 17–19.
[124] A. Kargul et alii, cit. at 25, 19–21.

environmental decisions by facilitating the data flow regarding parcels of land between different units of the city administration[125].

Despite these advances, the extent of AI integration in daily operations differs across the country. Larger urban areas like Warsaw, Łódź, and Kraków are at the forefront of AI adoption, while many smaller and rural municipalities lag behind. According to the 2023 report, advanced technologies such as AI and IoT are less common in smaller towns and villages. For instance, small local governments (with fewer than 49 employees) often lack the financial resources or technical expertise to deploy AI solutions. Only 19 per cent of small municipalities reported any plans to implement AI technologies in the near future, compared to 58 per cent of large municipalities[126]. No inter-municipal initiatives would aim to develop and implement AI systems amongst similarly sized cities[127].

5. Solutions Supporting the Algorithmisation of Public Administration

5.1. Technological Solutions

In Poland, the algorithmisation of public administration and other sectors involves deploying several key named systems, each leveraging specific technologies to enhance efficiency, service delivery, and data management. These systems reflect a growing reliance on AI, machine learning, cloud computing, and IoT technologies, all operating within the regulatory framework of data protection and transparency.

According to the 2023 report, 87 per cent of entities implementing new digital technologies reported collaborating with other organisations during the implementation process. These efforts' most frequently mentioned partners include other central administrative bodies, private sector entities, and research institutions. The development of E-Government systems and the implementation of AI in public administration is driven by various

[125] Information obtained during an interview with the Chief Information Officer of the City of Łódź conducted by Aleksandra Olbryk on 2 October 2024.
[126] A. Kargul et alii, cit. at 25, 22–24.
[127] Information obtained during an interview with the Chief Information Officer of the City of Łódź conducted by Aleksandra Olbryk on 2 October 2024.

technological providers, ranging from large-scale IT companies to innovative startups.

One of the leading players in this transformation is Asseco Poland, the largest IT company in Central and Eastern Europe, renowned for its comprehensive systems that support public administration[128]. Asseco has played a pivotal role in developing systems for the Social Insurance Institution (ZUS). AI helps streamline the processing of social benefits, predicting trends in welfare needs through advanced data analytics[129].

Another leading player is Comarch, a multinational company based in Krakow that provides a broad range of IT solutions, specialising in various sectors, including telecommunications, finance, retail, healthcare, and smart city management[130]. The Comarch Smart City platform leverages advanced technologies such as AI and the Internet of Things to enhance urban management by integrating multiple systems that impact daily life. It supports social engagement by allowing citizens to report infrastructure issues, submit ideas for municipal budgets, and participate in public consultations. It includes solutions for smart parking, enabling quicker identification of parking spaces, reducing traffic, and limiting emissions. Furthermore, the platform facilitates sustainable waste management and energy monitoring, contributing to more efficient urban resource use. In addition, the Comarch Smart City platform integrates various digital services, such as online public administration tasks, smart lighting systems, and remote meter readings, which allow for early detection of anomalies and improve resource management. These technologies contribute to making urban life more efficient, environmentally sustainable, and responsive to the needs of residents.

In the realm of smart city infrastructure and IoT, Digica, based in Łódź, develops custom AI solutions tailored to the needs of local governments[131]. Their expertise in combining AI with IoT technologies allows municipalities to monitor real-time data, such as environmental conditions and energy usage, enabling better urban services management. For instance, Digica's AI-powered

[128] Asseco Poland, at https://pl.asseco.com/, accessed 10 October 2024.
[129] Asseco Poland, *Kompleksowy System Informatyczny ZUS*, at https://pl.asseco.com/case-study/kompleksowy-system-informatyczny-zus-96/, accessed 10 October 2024.
[130] Comarch, at https://www.comarch.pl/, accessed 10 October 2024.
[131] Digica, at https://digica.com/, accessed 10 October 2024.

systems analyse surveillance footage to enhance public safety by detecting suspicious activities and alerting authorities in real time.

Another innovative provider, DAC.digital, based in Gdańsk, leverages blockchain and AI to improve transparency and security in public administration[132]. Their blockchain solutions ensure the integrity of public records, making sensitive data tamper-proof, which is critical for sectors like public finance. DAC.digital's AI-driven predictive models help local governments anticipate urban planning needs, improving long-term decision-making.

An important public-private initiative that fosters the use of AI in public administration is GovTech Polska, a government programme designed to stimulate technological innovation through collaboration with startups and technology companies[133]. GovTech Polska organises hackathons and competitions to encourage the development of AI solutions tailored to public sector challenges. One notable area of AI experimentation under this initiative includes the automation of welfare distribution, where algorithms assist in determining citizens' eligibility for social benefits by analysing various socio-economic datasets. Another critical application is predictive policing, where AI systems are tested to forecast potential crime hotspots, allowing law enforcement to deploy resources more effectively. Also, the ARBUZ system mentioned above, used by UOKiK, was designed in cooperation with GovTech Poland, which organised a competition to find the best machine-learning solutions. Using Scrum methodology in the development process allowed for flexible project management, enabling real-time adjustments to meet UOKiK's needs[134].

5.2. Organisational Solutions

Over one-third of central administrative units surveyed in 2023 reported that they regularly send all their employees to external training and provide opportunities to attend conferences and seminars on new digital technologies, typically doing so 1-2 times per year. However, 55 per cent of units do not conduct such

[132] DAC Digital, at https://dac.digital/, accessed 10 October 2024.
[133] GovTech Polska, at https://www.gov.pl/web/govtech, accessed 10 October 2024.
[134] P. Adamczewski et alii, cit. at 111, 8.

training, citing a lack of funding and an absence of an identified need for organising these programmes as the main reasons[135].

In our survey, some Polish ministries indicated sending their employees to external training programs despite not using algorithmic automation and AI-based applications. These include training on applications such as DALL-E 2, ChatGPT, Grammarly, and DeepL[136], using AI in the healthcare sector, and basic AI training[137]. The ministries reported that in October 2024, the Ministry of Digitalization will organise a training session for public administration employees titled "Effective Use of AI in Public Administration".

Employee training is supported by internal or general recommendations.

UOKiK prepared internal Guidelines for the Application of the ARBUZ System. The Guidelines specify, among other things, the rules for accessing the system, the responsibilities of users and system administrators, recommendations for using the system in matters related to the analysis of contractual patterns, the conflict resolution procedure, and the obligation for employees to update the data entered into the system. The Guidelines have been in effect since 1 January 2023.

In late September 2024, the Ministry of Digital Affairs published general recommendations titled "Generative Artificial Intelligence in the Service of Public Administration Employees – First Steps"[138]. Their purpose is to guide the safe use of GenAI in public administration. The Ministry recognised that GenAI tools can help carry out official tasks but also present significant risks. Public administration employees were given basic examples of AI applications in their daily work, such as using AI for inspiration, summarising information, conducting preliminary research, and a brief guide on inputting prompts.

However, the recommendations primarily focus on minimising the risks of using GenAI. For instance, due to data

[135] Ministry of Digital Affairs, cit. at 26, 46.

[136] Ministry of Agriculture and Rural Development, Ministry of National Education.

[137] Ministry of National Education.

[138] Ministry of Digital Affairs, "Generatywna sztuczna inteligencja w służbie pracowników administracji publicznej - pierwsze kroki" (September 2024), at https://www.gov.pl/web/ai/generatywna-sztuczna-inteligencja-w-sluzbie-pracownikow-administracji-publicznej---pierwsze-kroki, accessed 9 October 2024.

protection concerns, employees are instructed not to input any sensitive data, confidential and internal governmental information still in the preparatory phase and not intended for public release or personal data that could violate data protection regulations. Given GenAI's tendency to generate inaccurate details, also known as 'hallucinations', employees are advised to always verify the information produced by GenAI, including checking sources and consulting with experts in the relevant field. Assessing the impartiality of the materials obtained from GenAI is also recommended. When using AI-generated results in further work, public administration employees are required to disclose that the content was created or processed using GenAI tools, for example, by labelling it as "Content generated by GenAI (tool name and date of content generation)".

6. Litigation Concerning the Use of Algorithmic Automation or AI by the Public Administration

Despite the overall positive integration of new technologies into the administrative landscape, several legal actions have been brought concerning the functioning of automated algorithms in the Polish system.

One case concerns using an automated decision-making system that profiles the unemployed in labour offices. The system, called SyriuszStd, was integrated into the IT systems of 343 offices across Poland[139]. According to the now-repealed regulations introduced in the 2014 amendment[140] to the Law on employment promotion and labour market institutions[141], district labour offices were required to assign one of three assistance profiles to unemployed individuals using an IT system. Each profile determined the appropriate scope of assistance based on the needs of the unemployed person, as outlined in the Law[142]. This resulted

[139] Signity, *System wspomagający realizację zadań powiatowych urzędów pracy*, at https://www.sygnity.pl/administracja-publiczna/syriusz/, accessed 13 October 2024.

[140] Regulation of the Minister of Labour of 14 May 2014 on profiling of aid for the unemployed [rozporządzenie w sprawie profilowania pomocy dla bezrobotnego] Official Journal of 2014 item 631.

[141] Law of 20 April 2004 on employment promotion and labour market institutions [o promocji zatrudnienia i instytucjach rynku pracy], Official Journal of 2023 item 735.

[142] G. Sibiga, cit. at 58.

in categorising unemployed individuals into three groups according to their socioeconomic situation.

However, experts raised concerns about the scope of data used to make these decisions and the methodology behind the profiling algorithm[143]. As many as 18 categories of data were subject to the employee's evaluation, including information on education, age, gender, skills, entitlements, degree of disability, duration of unemployment and place of residence, among others. The information was to be processed using ICT systems provided by the Minister of Labour – the SyriuszStd algorithm. The decisions were based on answers to questions biased towards certain responses, the construction of questions was considered unfair, and the algorithmic profiling itself was overly simplistic[144]. Moreover, the criteria used to assign an assistance profile to unemployed individuals based on their responses were unclear to both labour office staff and the unemployed themselves[145].

As a result, following a complaint by the Polish Human Rights Ombudsman, the Constitutional Tribunal ruled in case K 53/16[146] in 2018 that the provisions concerning assistance profiling for the unemployed were unconstitutional. The Tribunal pointed out that the right to a fair trial was violated due to the lack of an option to appeal algorithmic decisions and that citizens' rights and freedoms were regulated through a sub-statutory act[147].

Another example is a tax fraud detection system used by the Head of the National Tax Administration – the Clearing House Information and Communication System (*System Teleinformatyczny Izby Rozliczeniowej – STIR*). The system's operation is based on the provisions introduced in the newly added chapter of the tax ordinance law[148], as amended by the 2017 Law[149]. The information

[143] J. Greser & M. Dymitruk, cit. at 47, 135.
[144] Panoptykon, *Co zawiera algorytm służący do profilowania w urzędach pracy?* (September 2016), at https://panoptykon.org/wiadomosc/co-zawiera-algorytm-sluzacy-do-profilowania-w-urzedach-pracy, accessed 13 October 2024.
[145] Panoptykon, cit. at 144.
[146] Judgment of the Constitutional Court of June 6, 2018, file number K 53/16, Jurisprudence of the Constitutional Court Official Collection 2018, item 38.
[147] J. Greser & M. Dymitruk, cit. at 47, 135.
[148] Law of 29 August 1997 tax ordinance law [ordynacja podatkowa], Official Journal of 2023 item 2383.
[149] Law of 24 November 2011on amending certain laws to prevent the use of the financial sector for fiscal fraud [ustawa o zmianie niektórych ustaw w celu

on an open account includes the account number, opening date, and the entity's identification data. Once the account is open, the bank will send records of all transactions to the clearing house, which will forward these details to the Head of the National Tax Administration at least once daily. Besides collecting and sharing transaction data, the clearing house will also determine a risk indicator, which secret algorithms will automatically generate within the STIR system. This indicator may suggest that an entity's activities are connected to illegal acts. Such findings could lead to actions by state authorities, including account freezes, refusal of VAT registration, or initiation of criminal proceedings[150].

The system has been controversial since its introduction. It remains so, primarily because of the secrecy surrounding the algorithms used to detect suspicious financial transactions and the significant legal repercussions that follow when a bank account is blocked after attracting the attention of tax authorities[151]. Criticism in legal doctrine has repeatedly targeted the regulations for their relatively vague guidance on the design of such algorithms and the criteria used to flag entities with certain indicators[152], which may lead to procedural and substantive issues. It was also noted that no legal provisions were introduced to allow for obtaining new information through monitoring taxpayers using IT tools beyond what could already be obtained through audits or inspections[153].

The functioning of this system was the subject of proceedings before the Provincial Administrative Court in Warsaw, which concluded with the judgment III SA/WA 2057/18 on September 20, 2018[154]. However, the administrative court did not address the issues related to the transparency of the algorithm and

przeciwdziałania wykorzystywaniu sektora finansowego do wyłudzeń skarbowych], Official Journal of 2017 item 2491.

150 P. Mikuła, *System Teleinformatyczny Izby Rozliczeniowej - najważniejsze aspekty nowej regulacji*, 2 Przegląd podatkowy 30 (2018).

151 P. Majka, *Procesowe problemy stosowania regulacji Systemu Teleinformatycznego Izby Rozliczeniowej – glosa do wyroku WSA w Warszawie z dnia 20 września 2018 r. (III SA /Wa 2057/18)*, 1 Studia Prawnicze KUL 367 (2020).

152 P. Mikuła, cit. at 150.

153 P. Szymanek, *Nowe narzędzia informatyczne służące monitorowaniu podatników: problematyka prawna, Stan prawny na 13 lutego 2023 r* (2023) 150.

154 Judgment of the Provincial Administrative Court in Warsaw of 20.09.2018, file number III SA/Wa 2057/18, LEX number 2571218.

failed to consider the concerns raised by legal scholars. As a result, the decision is regarded in the literature as unsatisfactory[155].

7. Future Development Directions of Algorithmic Public Administration

7.1. Starting Point

In 2023, three-quarters of all surveyed central administrative units undertook efforts to implement new digital technologies in activities related to the exercise of their statutory tasks. Of these, 35 per cent indicated that these efforts were based on an internal digital strategy. The primary source of ideas for implementing new technologies came from employee-submitted proposals for process improvements (85 per cent). Meanwhile, 16 per cent of the units surveyed did not engage in such implementation efforts[156].

7.2. Incentives and Challenges to a Broader Algorithmisation

As in other EU Member States, an important reason for modernising public administration is the need to align with EU guidelines and programmes. Under the "Europe's Digital Decade: Digital Targets for 2030" initiative, the digitalisation of public services is a major objective. This includes ensuring that all critical public services are available online, all citizens have access to their medical records online, and all citizens can access a digital ID[157].

When making decisions about digital development, it is crucial to consider that digital transformation enhances process efficiency and leads to cost optimisation. The use of such technologies can streamline the work of public officials and improve the overall effectiveness of actions taken by public institutions. In Poland, a significant catalyst for accelerating these changes was the COVID-19 pandemic, which forced public administration to elevate the quality of its services[158].

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[155] P. Majka, cit. at 151, 382.
[156] Ministry of Digital Affairs, cit. at 26, 7, 23.
[157] European Commission, *Europe's Digital Decade: digital targets for 2030*, at https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en, accessed 8 October 2024.
[158] Ministry of Digital Affairs, cit. at 26, 7, 11.

The public administration's use of new digital technologies benefits the state's overall development. Citizens also increasingly expect new solutions that enable faster and remote interaction with government authorities. For example, e-services reduce wait times for decisions in government offices, streamline document processing, and automate the decision-making processes within public administration[159].

In 2023, public administration bodies acknowledged that the primary sources of innovation were employee-submitted process improvement ideas (85 per cent), experiences from other entities such as companies or NGOs (76 per cent), and participation in industry conferences and webinars (76 per cent). Additionally, collaboration with other central administrative bodies, reports, articles, and studies on digital technologies, as well as cooperation with research institutions such as universities and local government units, were also significant factors[160].

78 per cent of public administration bodies indicated that they plan to implement new digital solutions in the near future[161].

In contrast, the most frequently cited barrier to implementing new digital technology solutions was insufficient funding, with 65 per cent identifying this as the primary obstacle[162]. The public administration units must bear the costs when purchasing new equipment to build the necessary infrastructure. Additionally, ongoing expenses are related to the regular updates of the systems and software[163]. The majority of local governments (85 per cent) cite a lack of financial resources as the primary barrier to adopting new technologies like AI[164]. While larger municipalities can allocate funds for AI development, smaller ones struggle to meet the high upfront costs associated with AI infrastructure, data processing, and maintenance. Moreover, only 28 per cent of local governments have dedicated staff overseeing digital transformation[165]. Limited budgets hinder their ability to invest in necessary infrastructure, training, and maintenance[166].

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159 Ministry of Digital Affairs, cit. at 26, 17.
160 Ministry of Digital Affairs, cit. at 26, 24.
161 Ministry of Digital Affairs, cit. at 26, 29.
162 Ministry of Digital Affairs cit. at 26, 7.
163 Ministry of Digital Affairs, cit. at 26, 18.
164 A. Kargul et alii, cit. at 25, 25–27.
165 A. Kargul et alii, cit. at 25, 27-30.
166 A. Kargul et alii, cit. at 25, 37–40.

Polish public administration must also deal with the shortage of staff digital literacy to deploy and manage AI solutions effectively. While IT departments lead 83 per cent of digital transformation initiatives, 48 per cent of local governments do not have designated personnel to handle digital issues[167]. Additionally, intense international competition and the rise of remote work opportunities have led to a noticeable recruitment challenge in recent years. Retaining top employees within the organisation has also become a significant issue[168].

At the same time, the level of digital literacy among citizens appears rather low[169]. Still, public trust in AI technologies remains a fundamental issue. Many citizens are hesitant to interact with fully automated systems. A 2022 survey indicated that 55 per cent of Polish citizens had interacted with digital public services, though many still expressed concerns about privacy and data security[170].

A crucial element is also citizens' access to the Internet. Although Internet accessibility in Poland in 2024 is higher than in previous years, there are still regions where access to digital services remains limited, particularly in eastern Poland. Therefore, ensuring equal access to e-administration services for all citizens remains challenging[171].

A significant challenge that public administration bodies may face during the digitalisation process is the absence of a developed strategic plan, as well as a lack of expertise and understanding of the specific needs of individual bodies[172]. Due to the lack of a coordinated funding scheme for local governments from the central bodies of either the Ministry of Internal Affairs and Administration or the Ministry of Digital Affairs, the development of AI systems in individual cities will depend on their internal financial policies[173].

Due to the complex public procurement procedures and the limited number of suppliers of AI systems for government bodies, developing an AI system for a local administration is a prolonged

[167] A. Kargul et alii, cit. at 25, 32–34.
[168] Ministry of Digital Affairs, cit. at 26, 18.
[169] Ministry of Digital Affairs, cit. at 26, 18–19.
[170] A. Kargul et alii, cit. at 25, 35–37.
[171] A. Kargul et alii, cit. at 25, 396–398.
[172] Ministry of Digital Affairs, cit. at 26, 19.
[173] Information obtained during an interview with the Chief Information Officer of the City of Łódź conducted by Aleksandra Olbryk on 2 October 2024.

process, requiring significant resources and know-how from local government units[174].

It is also necessary to consider the technological barriers to an institution's infrastructure, such as the lack of adequate equipment for implementing new digital technologies. Unfortunately, management and staff often resist change, mainly due to a lack of awareness about the potential return on investment and the benefits of new technologies[175].

7.3. Pilot Projects and Future Potential

One of the upcoming plans for new functionalities of public administration is the introduction of e-Delivery system. Starting January 1, 2025, this service will be incorporated as the electronic equivalent of a registered letter with the acknowledgement of receipt. Through e-Delivery, public institutions, citizens, and businesses will benefit from convenient and secure electronic communication, which will have the same legal standing as traditional registered mail with confirmation of receipt[176].

The mCitizen app offers services like ePayments (*ePłatności*), allowing users to pay administrative fees via phone[177]. This feature is being piloted in 58 cities[178]. Moreover, as part of the mCitizen app, a "Virtual Assistant" module will be introduced based on GPT technology, utilising AI. This bot will shorten users' time in obtaining the information they need[179].

The GovTech Polska initiative fosters innovation by helping public administration collaborate with private and academic entities to address technological challenges. It plays a significant role in promoting the use of AI through pilot projects and public-private partnerships. These projects enable local governments to test new AI solutions in real-world environments without the risks associated with full-scale implementation. GovTech aims to bridge

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174 Information obtained during an interview with the Chief Information Officer of the City of Łódź conducted by Aleksandra Olbryk on 2 October 2024.

175 Ministry of Digital Affairs, cit. at 26, 30.

176 *e-Doręczenia* (2024), at https://www.gov.pl/web/e-doreczenia, accessed 14 October 2024.

177 mCitizen, *Usługi epłatności* (2024), at https://info.mobywatel.gov.pl/uslugi/eplatnosci, accessed 13 October 2024.

178 *Lista urzędów w pilotażu* (2024), at https://www.gov.pl/web/eplatnosci/lista-urzedow-w-programie, accessed 13 October 2024.

179 See https://www.gov.pl/web/cyfryzacja-badania-i-projektowanie-mobywatel20/wirtualny-asystent, accessed 16 October 2024.

the gap between the public sector and technology innovators, fostering collaboration on AI projects related to transport, health services, and public safety[180]. One of its pivotal projects, the Digital Sandbox, provides a controlled environment where AI solutions can be tested and evaluated before full implementation. The goal is to use the data collected in the sandbox to improve public services, ensuring that AI solutions are secure, effective, and compliant with regulations[181].

The Polish Digital Project Centre (CPPC) has signed contracts for funding under the FERC 02.01 action, allocating over 726 million PLN (EUR 169 million) to 9 institutions. This investment aims to develop e-public services that allow citizens and businesses to handle matters online, reducing the need for office visits, especially for the elderly and people with disabilities. Key projects include "Nowa Academica" for accessing digital versions of books and scientific articles, the eUFG platform for electronic insurance services, EPU 3.0 for online filing claims, and geodetic resources for ordering maps. Additionally, a new CRM system in the Ministry of Finance will enhance taxpayer service, while the SOLR 2.0 system will streamline drug reimbursement processes. The P1 project will introduce new e-services for patients, and the digitisation of employment contracts via Biznes.gov.pl will expedite HR processes[182].

To conclude, as public administration increasingly adopts tools based on emerging technologies, analysing new initiatives offers a framework for evaluating Poland's future potential to transform public administration further and improve citizen engagement in the digital age. While the digital transformation of public administration holds considerable promise, a range of

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[180] AI Research Group (SAI), *Współpraca człowieka z AI: Perspektywy dla polskiego sektora publicznego* [Human collaboration with AI: Perspectives for the Polish public sector] (2023), 18–20, at https://sodapl.com/wp-content/uploads/2023/10/Raport-SoDA-AI-Research-Group.pdf, accessed 12 September 2024.

[181] AI Poland, *Public Policy on AI in Poland* (2023), at https://aipoland.org/public-policy/, accessed 12 September 2024; European Commission, *Poland: Public Sector Dimension of AI Strategy* (2023), at https://ai-watch.ec.europa.eu/topics/public-sector/public-sector-dimension-ai-national-strategies/poland-public-sector-dimension-ai-strategy_en, accessed 12 September 2024.

[182] Centre of Projects Digital Poland, *Rozwój e-usług ze wsparciem ponad 726 mln PLN* (October 2024), at hhttps://www.gov.pl/web/cppc/rozwoj-e-uslug-ze-wsparciem-ponad-726-mln-pln, accessed 13 October 2024.

challenges must be addressed. Critical issues such as the lack of funding, cybersecurity, and the digital divide pose significant threats to the transparent and efficient deployment of emerging technologies.

THE 'ALGORITHMIC RACE': INSIGHTS FROM THE ROMANIAN PUBLIC SECTOR

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Abstract

The Romanian public administration has undergone significant digital transformation over the last few decades, especially since 2009, when a process of e-service delivery was launched. The process is now continuing with initiatives to consider the integration of algorithmic automation and artificial intelligence in the public sector – the "algorithmic race". However, this rapid development has outpaced the evolution of the Romanian legal framework, which still lacks specific legislation on the use of algorithms in public administration. The current national (Administrative Judicial Review Act of 2004, Administrative Code of 2019) and European Union (GDPR and AI Act) legal frameworks provide some guidance. Still, these are insufficient for the unique challenges posed by AI, such as transparency, accountability, and the protection of citizens' rights.

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Romania's digitalisation efforts focus on efficiency rather than a user-centred approach, often neglecting essential legal protections. While some digitalisation initiatives introduce principles for interoperability and inclusivity, they lack enforceable guidelines for implementing AI-driven tools. This raises concerns about potential infringements of citizens' rights, such as data protection violations and the limited ability to challenge automated decisions. However, the potential benefits of comprehensive legal reforms, such as establishing clear guidelines and ethical standards for the use of AI in public administration, offer hope for a more user-centred digital environment that safeguards individual rights.

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1. Introduction

Digital technology applications, AI, and machine learning are ongoing trends that have lead to process disruption in both private industries and the public sector. While the implementation of digital technologies in public administration is still at a nascent stage, the integration of such solutions into administrative law marks a

significant transformation[1], revealing the rise of an algorithmic legal state[2].

The Romanian government has launched a digital transformation initiative to implement these technologies. The aim is to improve service delivery, streamline bureaucratic procedures, and increase transparency. The transformation began in June 2009 with Romanian Government Resolution No. 661/2009[3], a collaborative memorandum between the Romanian Ministry of Information Technology and the South Korean Ministry of Public Administration. This initial initiative laid the foundation for subsequent progress in public services. These technologies offer significant benefits, including improved public services and faster operation.

Romania has taken proactive measures to address the digital revolution, resulting in the establishment of the Romanian Digitalisation Authority (RDA) in 2020. Platforms such as 'aici.gov.ro', 'ghișeul.ro', and the National Interoperability Platform (NIP)[4] have been established to provide e-services to both citizens and businesses.

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[1] See the papers collected in *Eur. Rev. Dig. Admin. & L.*, special issue on *Administrative Law Facing Digital Challenges*, at https://www.erdalreview.eu/pubblicazioni/estratti/10.4399/97888255389602-administrative-law-facing-digital-challenges-estratto.html, last accessed 9 September 2024; G. De Gregorio, *Digital Constitutionalism in Europe: Reframing Rights and Powers in the Algorithmic Society* (2022), 273–317.

[2] R. Williams, *Rethinking Administrative Law for Algorithmic Decision Making*, 42 Ox. J. Leg. Stud. 468 (2022).

[3] Hotărârea Guvernului nr. 661/2009 pentru aprobarea Memorandumului de înțelegere dintre Ministerul Comunicațiilor şi Tehnologiei Informației din România şi Ministerul Administrației Publice şi Securității din Republica Coreea privind cooperarea în domeniul informatizării naționale, publicată în Monitorul Oficial nr. 414 din 17 iunie 2009 [Romanian Government Resolution No. 661/2009, for the approval of the Memorandum of Understanding between the Ministry of Communications and Information Technology of Romania and the Ministry of Public Administration and Security of the Republic of Korea regarding cooperation in the field of national informatisation, published in the Official Journal of Romania No. 414, 17 June 2009].

[4] Legea nr. 242/2022 privind schimbul de date între sisteme informatice și crearea Platformei naționale de interoperabilitate, publicată în Monitorul Oficial nr. 752 din 27 iulie 2022 [Law No. 242/2022 regarding the exchange of data between information systems and the creation of the National Interoperability Platform, published in the Official Journal of Romania No. 752 of 27 July 2022].

This algorithmic shift in public administration has revealed significant shortcomings in Romania's legal framework. The current administrative laws, particularly the Administrative Judicial Review Act of 2004 (AJRA)[5] and the Administrative Code[6], have failed to adapt to technological advances in decision-making procedures. The lack of explicit regulation concerning Algorithmic Automation (AA) and Artificial Intelligence (AI) has created a legal void, leaving citizens' rights and protections inadequately defended against the intricacies posed by these technologies.

The primary challenge in adapting to the algorithmic state is to reconcile the efficiency and innovation introduced by AI and AA with the core tenets of administrative law, including transparency, accountability, fairness, and the protection of individual rights[7]. The existing legal framework lacks explicit guidance or regulation for public bodies on the responsible implementation of AI technologies. This absence raises concerns about potential violations of citizens' rights, including issues related to data privacy, the right to explanation, and the ability to challenge automated administrative decisions[8].

Futhermore, Romania's digitalisation process has predominantly followed a 'digital-by-default' and 'digital-first' approach, focusing on the efficiency of public services rather than a

[5] Legea nr. 554/2004 a contenciosului administrativ, publicată în Monitorul Oficial nr. 1154 din 7 decembrie 2004 [Law on Administrative Judicial Review, No. 554/2004, Official Journal of Romania 1154 of 7 December 2004].

[6] Ordonanța de Urgență a Guvenrului nr. 57/2019 privind Codul administrativ, publicată în Monitorul Oficial nr. 555 din 5 iulie 2019 [Romanian Government, Emergency Ordinance No. 57/2019 regarding the Administrative Code, Official Journal of Romania No. 555 of 5 July 2019].

[7] C. Coglianese, *Law and Empathy in the Automated State*, in M. Zalnieriute & Z. Bednarz (eds.), *Money, Power, and AI: Automated Banks and Automated States* (2023) 173–188; S. Ranchordás, *Empathy in the Digital Administrative State*, 71 Duke L. J. 1341 (2022).

[8] J. Wolswinkel, *Artificial Intelligence and Administrative Law* (2022), at https://www.coe.int/en/web/cdcj/ai-administrative-law, accessed 22 September 2024.

user-friendly, citizen-centred model[9]. While public bodies are obliged to adopt digital solutions, there have been no corresponding legal safeguards to ensure these technologies are used ethically and transparently. The principles outlined in various legislative acts remain largely declaratory, lacking enforceable obligations or detailed implementation guidelines.

The National Interoperability Framework (NIF)[10] and the NIP are attempts to create a more integrated and citizen-centred approach to digital public services. They introduce principles such as user-centricity, inclusion, and accessibility and aim to enhance public service delivery by improving interoperability between institutions. However, these initiatives still fall short of providing a comprehensive legal basis for the use of AA and AI as they are broad, lack specificity, and do not include any explicit directive or regulation to address the unique challenges posed by AI technologies.

This paper explores the impact of the algorithmic race on Romania's public administration, focusing mainly on the legal framework needed to regulate the use of digital services, including AA and AI. It examines the development of digital administrative bodies, the existing legal provisions – or the lack thereof – governing the use of these technologies, and the impact on citizens' rights and public trust. The paper discusses in more detail the Guidelines for Implementing the NIP. These guidelines establish foundational data exchange and interoperability protocols but do not address the ethical, legal, and societal implications of integrating AI into public administration. The lack of provisions for algorithmic transparency, accountability in AI decision-making, and user rights with respect to AI-generated outcomes underscores the urgent need for a more robust legal framework. Based on these challenges, the paper highlights the importance of developing comprehensive legislation that keeps pace

[9] A. von Ungern-Sternberg, *Discriminatory AI and the Law: Legal Standards for Algorithmic Profiling*, in O. Mueller et alii (eds.), *The Cambridge Handbook of Responsible Artificial Intelligence: Interdisciplinary Perspectives* (2022) 252–278.

[10] Hotărârea Guvernului nr. 908/2017 pentru aprobarea Cadrului Național de Interoperabilitate, publicată în Monitorul Oficial nr. 1031 din 28 decembrie 2017 [Romanian Governmental Resolution No. 908/2017 for the approval of the National Interoperability Framework, Official Journal of Romania No. 1031 of 28 December 2017].

with technological advances[11]. This includes establishing precise legal requirements and safeguards for the use of AA and AI, ensuring transparency, accountability, and the protection of citizens' rights[12].

2. Digital Administrative Bodies

The first steps towards public sector digitalisation were taken in June 2009 with the Romanian Government Resolution No. 661/2009[13], a joint memorandum between the Romanian Ministry of Information Technology and the South Korean Ministry of Public Administration. The memorandum aimed to establish cooperation bodies and exchange expertise in order to provide citizens with optimal administrative e-services.

After the joint session, the new Romanian Digitalisation Authority (RDA) was established by the Romanian Government Resolution No. 1439/2009[14], which founded the National Management Centre of the Digital Society (NMCDS) and the Digital Romania National Centre (DRNC). The NMCDS focused on the maintenance and provision of services through the e-government platform, public procurement e-services, and freight transport e-systems. Its role is mainly focused on the development of e-services, with characteristics relating to service continuity, processing capacity, and the implementation of nationally tailored e-services. It also drafted and proposed legislation to the Ministry of Communications and Information Society in the area of the digitalisation of public services. The DRNC's main objective was to manage e-content and information services related to the e-government platform. It supervised and implemented the systems that provide e-services. Interestingly, the

[11] P. Miller, *A New "Machinery of Government"?: The Automation of Administrative Decision-Making*, in M. Zalnieriute & Z. Bednarz (eds.), cit. at 7, 116–135.

[12] A. von Ungern-Sternberg, cit. at 9.

[13] Romanian Government Resolution No. 661/2009, cit. at 3.

[14] Hotărârea Guvernului nr. 1439/2009 privind înființarea Centrului Național de Management pentru Societatea Informațională şi a Centrului Național 'România Digitală', publicată în Monitorul Oficial nr. 857 din 9 decembrie 2009 [Romanian Government Resolution No. 1439/2009 regarding the establishment of the National Centre for Management of the Information Society and the Digital Romania National Centre, Official Journal of Romania No. 857 of 9 December 2009].

NMCDS and DRNC had overlapping responsibilities, the only difference being the platform each centre manages.

In 2013, the Agency for the Implementation of the Romanian Digital Agenda (ARDA)[15] took over the NMCDS, the DRNC, and the National Supercomputing Centre. Its general task was to implement national e-services, including e-government and other sector-specific e-services. ARDA's competences remained unchanged until 2020.

In 2020, the ARDA was replaced by the Digital Romanian Authority (DRA), which was set up by Romanian Government Resolution No. 89/2020[16]. Under the direct supervision of the Ministry of Research, Innovation, and Digitalisation, the DRA plays a leading role in developing, implementing, and monitoring digital services and digital transformation. The DRA has not only retained the previous powers of ARDA but also increased its competence and transparency through a series of reports and communications between the public and the private sectors. For example, the Department for Digital Transformation Programme Implementation (DDTPI)[17], which manages the government's cloud programme, was created under the supervision of the DRA.

This institutional set-up was intended to create a task force focused on the development and delivery of digital solutions applying a top-down approach and, in theory, to ensure a high level of coordination between local and central public authorities. However, it did not create new rules for the use of digital tools. The new obligations

[15] Hotărârea Guvernului nr. 1.132/2013 privind organizarea şi funcţionarea Agenţiei pentru Agenda Digitală a României, precum şi de modificare a Hotărârii Guvernului nr. 548/2013 privind organizarea şi funcţionarea Ministerului pentru Societatea Informaţională, publicată în Monitorul Oficial nr. 32 din 15 ianuarie 2014 [Romanian Government Resolution No. 1132/2013 regarding the organisation and functioning of the Agency for the Digital Agenda of Romania, as well as the amendment of Romanian Government Resolution No. 548/2013 regarding the organisation and functioning of the Ministry for the Information Society, Official Journal of Romania No. 32 of 15 January 2014].

[16] Hotărârea Guvernului nr. 89/2020 privind organizarea și funcționarea Autorității pentru Digitalizarea României, publicată în Monitorul Oficial nr. 113 din 13 februarie 2020 [Romanian Government Resolution No. 89/2020 regarding the organisation and functioning of the Authority for the Digitalisation of Romania, Official Journal of Romania No. 113 of 13 February 2020].

[17] ibid.

made digitalisation mandatory for public authorities without ensuring the necessary safeguards.

3. The Legal Basis for Algorithmic Automation and Artificial Intelligence

The Administrative Code, adopted in 2019[18], represents the primary legislation of substantive administrative law. Romania's main administrative procedural law is the Administrative Judicial Review Act of 2004[19]. The AJRA regulates general administrative procedures, including remedies for illegal administrative acts and contracts. Together with the AJRA, the Freedom of Information Act (FOIA)[20] provides for transparency rights and sets out extensive rights for aggrieved parties, as well as specialised administrative procedures for remedies. Another piece of legislation on public information and access is the Romanian Government Resolution No. 878/2005 (GR 878/2005)[21], which deals with the specific area of environmental information. The FOIA and GR 878/2005 mostly bring a citizen-centred approach to administrative procedures, requiring public authorities to have specialised departments that guide citizens when requesting public information.

Law No. 52/2003 on transparency in decision-making within public administration[22] states that public authorities, while drafting a new normative law, must announce the existence of this procedure on its website in a place accessible to the public, and send it to the national

[18] Romanian Government, Emergency Ordinance No. 57/2019, cit. at 6.
[19] Law on Administrative Judicial Review, No. 554/2004, cit. at 5.
[20] Legea nr. 544/2001 privind liberul acces la informațiile de interes public, publicată în Monitorul Oficial nr. 663 din 23 octombrie 2001 [Law No. 544/2001 on Freedom of Information Act, Official Journal of Romania No. 663 of 23 October 2001].
[21] Hotărârea Guvernului nr. 878/2005 privind accesul publicului la informația privind mediul, publicată în Monitorul Oficial nr. 760 din 22 august 2005 [Romanian Government Resolution No. 878/2005, regarding public access to environmental information, Official Journal of Romania No. 760 of 22 August 2005].
[22] Legea nr. 52/2003 (republicată) privind transparența decizională în administrația publică, publicată în Monitorul Oficial nr. 749 din 3 decembrie 2013 [Law No. 52/2003 regarding decision-making transparency in public administration, Official Journal of Romania No. 749 of 3 December 2013].

or local press. However, there are no provisions on what constitutes *a place accessible to the public*.

On the other end of the spectrum is Law No. 182/2002 regarding classified information[23], which deals with information excluded from the application of the FOIA and establishes rules for its dissemination or denial of access. This law is the first act that explicitly obliges the public administration to balance the effects of the disclosure of public information, by prohibiting the use of its classified status to hide breaches of law or administrative errors and by limiting access to public information or any other conduct that would unlawfully restrict people's rights.

However, none of these laws were designed to address the complexities introduced by AI and AA. As a result, the current legal system lacks the necessary provisions to deal effectively with the introduction of these technologies, creating a gap that puts citizens' rights at risk.

The DRA is the leading actor in regulating digitalisation in public administration. The primary sectoral legislation is framed around the platforms implemented by the DRA: '*aici.gov.ro*' (a system for registering petitions, documents and other requests to public institutions, the Public Procurement Electronic System – PPES), '*ghișeul.ro*' (a one-stop-shop e-payment service for public duties), the IT System for Electronic Allocation in Transport (ISEAT), the Single Point of Contact (SPOC) (an e-government portal that allows service providers to obtain the information they need and complete administrative procedures online), e-Gov (the National Electronic System (SEN) that provides forms and digital interaction between citizens and public authorities) and the ROeID (supporting the digital identity framework).

The main issue the legislation addresses is not the creation of a legal basis for the use of AA and/or AI but rather the creation of a general obligation for the administration to continue and move towards digitalisation. There are few or no definitions of specific

[23] Legea nr. 182/2002 privind protecția informațiilor clasificate, publicată în Monitorul Oficial nr. 248 din 12 aprilie 2002 [Law No. 182/2002 regarding Classified Information, Official Journal of Romania No. 248 of 12 April 2002].

terms, with automatic data processing being defined as any form of processing by an IT solution[24].

This legislative process has promoted a digital-by-default and digital-first approach, focusing more on service efficiency than creating user-friendly, citizen-centred services with adequate safeguards. The new legislation did not implement safeguards and security measures tailored to automated processes or AI. The level of protection explicitly required by the law is rudimentary: checksum and message integrity (HMAC-SHA1)[25], timestamps for requests, SOAP Fault Error Handling[26], and simple UTF-8 Encoding[27]. This level of security provides only basic protections such as message integrity and structured error handling[28]. The system lacks encryption, input validation, logging and authorisation, and rate limiting, making the

[24] Art. 35 para. 1 of Legea nr. 161/2003 privind unele măsuri pentru asigurarea transparenței în exercitarea demnităților publice, a funcțiilor publice și în mediul de afaceri, prevenirea și sancționarea corupției, publicată în Monitorul Oficial nr. 279 din 21 aprilie 2003 [Law No. 161/2003 regarding certain measures to ensure transparency in the exercise of public offices, public functions, and in the business environment, as well as the prevention and sanctioning of corruption, Official Journal of Romania No. 279 of 21 April 2003].

[25] F. Schuhmacher, *Canonical DPA Attack on HMAC-SHA1/SHA2*, in J. Balasch & C. O'Flynn (eds.), *Constructive Side-Channel Analysis and Secure Design* (2022) 193–211; D. Divya Priya & A. Mahalakshmi, *Data Security in Mobile Cloud Computing Using TOTP Generated By HMAC-SHA1 Algorithm*, 6(1) Int'l J. Comp. Sci. Trends & Tech. 93–98 (2018); D. Ravilla & C.S.R. Putta, *Implementation of HMAC-SHA256 algorithm for hybrid routing protocols in MANETs*, in *2015 International Conference on Electronic Design, Computer Networks & Automated Verification (EDCAV)* (2015) 154–159; N. Ayofe Azeez & O.J. Chinazo, *Achieving Data Authentication with HMAC-SHA256 Algorithm*, 54(2) GESJ: Comp. Sci. & Telecomm. J. 34–43 (2018).

[26] C.-L. Fang, D. Liang, F. Lin, C.-C. Lin, *Fault tolerant Web Services*, 53(1) J. Systems Architecture 21–38 (2007).

[27] M. Crane, A. Trotman, R. O'Keefe, *Malformed UTF-8 and spam*, in *Proceedings of the 18th Australasian Document Computing Symposium (ADCS '13). Association for Computing Machinery* (2013) 101–104; R.D. Cameron, *u8u16: A High-Speed UTF-8 to UTF-16 Transcoder Using Parallel Bit Streams*, Technical Report 2007-18 School of Computing Science, Simon Fraser University (2007).

[28] A. Shahana et alii, *AI-Driven Cybersecurity: Balancing Advancements and Safeguards*, 6(2) J. Comp. Sci. & Techn. Stud. 76–85 (2024); N.R. Zack, C.D. Jaeger, W.J. Hunteman, *Integrated safeguards and security for a highly automated process* (1993), at <https://www.osti.gov/servlets/purl/10182004>, accessed 22 September 2024.

service vulnerable to a wide range of attacks, including injection attacks, unauthorised access, and DDoS attacks[29].

This problem is exacerbated by the fact that national legislation does not limit public administrations' reliance on AA or AI, nor does it provide guidelines on how such technologies should be used to avoid infringing on citizens' rights. The only rules that can be considered directly applicable are those provided by the General Data Protection Regulation (GDPR), which should restrict the use of AA or AI[30].

As mentioned above, there is no general legal basis for the use of AA or AI by the public administration, and no explicit directives allowing them to experiment with such technologies. As the main body overseeing digitalisation, the DRA does not provide specific guidance on the development and implementation of public digital services, regardless of the use of AI or automation.

4. Legal Requirements for Using Algorithmic Automation or Artificial Intelligence in Public Administration

The principles governing the provision of administrative services are based on the Administrative Code and other sectoral legislation[31]. These general administrative principles are not specifically tailored to digital service delivery.

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[29] H. Mustapha & A.M. Alghamdi, *DDoS attacks on the Internet of Things and their prevention methods*, in *Proceedings of the 2nd International Conference on Future Networks and Distributed Systems (ICFNDS '18)* (2018), Article 4, 1–5; S. Singhal et alii, *Detection of application layer DDoS attacks using big data technologies*, 23(2) J. Discrete Math. Sci. & Cryptography 563–571 (2020); J. Mariam Biju, N. Gopal, A.J Prakash, *Cyber Attacks and its Different Types*, 6(3) Int'l Res. J. Eng. & Tech. 4849–4852 (2019).

[30] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 September 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

[31] Article 580 of the Administrative Code establishes seven ground principles for delivering public services: transparency, equal treatment in the provision of public services, continuity of the provision of public services, adaptability, accessibility, responsibility, and providing high-quality public services. These principles are only briefly defined and enumerated, and their meaning is not explained further throughout the rest of the Administrative Code.

Romania still has the opportunity to regulate the use of digital means, and more specifically, algorithms in public administration through the adoption of the Code of Administrative Procedures, which is currently under public consultation. The draft, however, only briefly refers to digital administrative procedures without setting minimum standards or safeguards[32].

Currently, the main rule applicable to AA and AI stems from Articles 21 and 22 of the GDPR[33] and concerns the right of the data subject to object to any form of automatic data processing or profiling. The GDPR provides several safeguards against arbitrary algorithm use and establishes a baseline regarding personal data use[34]. These rules, along with the general administrative principles and the forthcoming rules of the EU AI Act[35], provide a minimum of regulation for using algorithms by the public administration. However, as already mentioned, these regulations are not tailored to the specific challenges AI poses.

The Administrative Code lays down the first set of principles that can be applied *mutatis mutandis* to public e-procedures[36]. The first issue that can be raised is the possible violation of the transparency principle. The public administration is required to inform the public

[32] The current draft for the Procedural Administrative Code (LP/14 February 2024) establishes rules only regarding public authorities' obligation to simplify their processes through digitalisation. It does not provide any rule or principle that creates safeguards for individuals, with the sole exception of the rights already imposed by the GDPR.

[33] Art. 21 GDPR: "The data subject shall have the right to object, on grounds relating to his or her particular situation, at any time to processing of personal data concerning him or her which is based on point (e) or (f) of Article 6(1), including profiling based on those provisions. The controller shall no longer process the personal data unless the controller demonstrates compelling legitimate grounds for the processing which override the interests, rights and freedoms of the data subject or for the establishment, exercise or defence of legal claims".

[34] K. Wiedemann, *Profiling and (automated) decision-making under the GDPR: A two-step approach*, 45 Comp. L. & Sec. Rev. 105662 (2022).

[35] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No. 300/2008, (EU) No. 167/2013, (EU) No. 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act).

[36] Wiedemann, cit. at 34.

about the methods used to determine its activities and objectives, regardless of the means of delivery. This principle also applies to the resolution of complaints and disputes. The problem with digital services is that the public may sometimes not be unaware that they are subject to automatic procedures as no specific national legislation obliges the public authority to disclose such information. Moreover, some national e-services are developed in partnership with the Romanian Intelligence Agency[37], whose actions are classified as a state secret and protected under national legislation[38].

This has implications for accessibility and fairness, as there is often a lack of appropriate guidelines for using public e-services. The problem is further exacerbated by the lack of minimum requirements when building a platform, and each application is built by different entities, usually outsourced. One of the most recent examples is the National Trade Registers' Office Online Services Portal (e-NTRO), which aims to bring digital services to entrepreneurs and registered businesses. In the first two months since the launch of the e-NTRO, a security breach occurred, impacting over one million limited liability companies and over 3000 users[39]. The e-NTRO implementation also doubled the time needed to solve requests, cut register productivity in half, and increased overtime[40].

Moreover, there are no new provisions to ensure equal treatment and accountability in the delivery of public e-services. The same rules that apply to traditional public procedures apply to e-

[37] See https://www.RDA.gov.ro/demararea-proiectului-aferent-investitiei-1-implementarea-infrastructurii-de-cloud-guvernamental-finantat-prin-pnrr-componenta-7-transformare-digitala/, accessed 10 September 2024.

[38] Legea nr. 182/2002 privind protecția informațiilor clasificate, publicată în Monitorul Oficial nr. 248 din 12 aprilie 2002 [Law No. 182/2002 regarding the protection of classified information, published in the Official Journal of Romania No. 248 of 12 April 2002]; Legea nr. 14/1992 privind organizarea și funcționarea Serviciului Român de Informații, publicată în Monitorul Oficial nr. 33 din 3 martie 1992 [Law No. 14/1992 regarding the organisation and functioning of the Romanian Intelligence Service, published in the Official Journal of Romania No. 33 of 3 March 1992].

[39] See https://www.incorpo.ro/ro-ro/press/bresa-de-date-vulnerabilitate-registrul-comertului-onrc/, accessed 15 September 2024.

[40] See https://www.incorpo.ro/ro-ro/press/scrisoare-deschisa-onrc-v2-0/#alte-statistici-interesante, accessed 15 September 2024.

administration but with fewer safeguards for user interaction. In contrast to traditional bureaucracies, when using e-services, the user is not aware of the steps involved in the delivery of the service. In order to challenge a digital decision, whether automated or not, the user must first understand how the programme works. There are no published source codes or pseudo-codes to help us understand the technology behind these processes or how they resolve administrative claims and requests.

These aspects have an impact on the possibility of challenging electronic administrative acts since the time limit for providing the necessary information (e.g. the software used, types of processing, fault-checks implemented or even the reasons underlying the decision) is the same as the time limit imposed for challenging the administrative act[41]. Furthermore, the administrative complaint must address all the issues that could be further discussed before the court in the event of a negative response from the administration. This creates a digital barrier for the injured persons as, in most cases, they do not know what to challenge and where the fault lies.

The NIF and the NIP represent further efforts to create a more integrated and citizen-centred approach to digital public services. Building on previous initiatives, the NIP aims to provide a common legal and technical foundation to improve the delivery of public services.

To address these shortcomings and the lack of a specific legal framework for digital services, we will examine the rules introduced by the NIF and the NIP over time. Though these initiatives aim to establish a common legal and technical foundation for interoperability,

[41] As no national legislation requires public authorities to disclose the use of automatic decision-making programmes or profiling systems, the citizen should first try to find out whether this is the case with regard to their request. The legal response time (often overlooked by public authorities) ranges from 10 to 30 days, depending on the complexity of the public interest issue posed. At the same time, the time limit for formulating an administrative complaint is also 30 days. Another problem is that the argumentation of the administrative complaint sometimes cannot be presented before a court, so that the arguments that can be presented are only those mentioned in the initial administrative complaint. However, it is clear that the claimant cannot (rightfully) invoke unlawful data processing if they were not aware of the existence of such a case.

they can be extrapolated to other administrative digital services. The following sections will explore how the NIF and NIP provisions could fill the legal gaps and enhance the digitalisation of public administration.

5. The National Interoperability Framework and Platform

The National Interoperability Framework[42] is the first act to translate the administration's digitalisation into a direct impact on citizens and end-users. The NIF established the general framework for digital interoperability, drawing inspiration from the European Digital Agenda[43]. The main objective was improving public service delivery in Romania by improving interoperability across institutions, sectors, and borders.

The NIF created the first specific principles in the area of digital administrative services, stating that public administration should be user-centred. These principles state that electronic public services should be user-friendly, secure, and have a flexible interface that allows for customisation. Emphasis is placed on user data, expressing the need for safeguards against excessive data sharing and respect for privacy rights[44].

In terms of inclusion and accessibility, the NIF provides the first clear principles, stating that the aim is to use information technology to create equal opportunities for citizens and the business environment. This is particularly important as the rights of citizens and businesses may generally be treated differently in their relationships with the public administration. For example, this would be the case

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[42] Hotărârea Guvernului nr. 908/2017 pentru aprobarea Cadrului Național de Interoperabilitate, publicată în Monitorul Oficial nr. 1031 din 28 decembrie 2017 [Romanian Government Resolution No. 908/2017 for the approval of the National Interoperability Framework, published in the Official Journal of Romania No. 1031 of 28 December 2017].

[43] See https://www.europarl.europa.eu/factsheets/en/sheet/64/digital-agenda-for-europe, accessed 15 September 2024.

[44] Hotărârea Guvernului nr. 908/2017 pentru aprobarea Cadrului Național de Interoperabilitate, publicată în Monitorul Oficial nr. 1031 din 28 decembrie 2017 [Romanian Government Resolution No. 908/2017 for the approval of the National Interoperability Framework, published in the Official Journal of Romania No. 1031 of 28 December 2017, point 2.5].

when communicating with the Anti-Fraud National Agency (AFNA), where companies are forced to use digital authentication to send financial documents[45]. A key principle here is that the need for multi-channel communication is recognised; as a general rule, it is also established that the traditional way of delivering public services, face-to-face or on paper, must coexist with the electronic delivery system to give citizens a choice as to how they access services.

However, these statements contradict the principles of administrative simplification, which prioritise 'digital-by-default' and 'digital-first'. This approach shifts the focus to the efficiency and user-friendliness of public services without taking into account the rights of citizens to access public services in good conditions.

Law No. 242/2022 furthered the path towards administrative interoperability and digitalisation by creating the National Interoperability Platform. The platform aims to create a unified informatics framework that promotes interconnectivity between the databases of different public authorities. However, it is not yet operational. The NIP defines the digital legal environment and establishes applicable digital principles.

Unfortunately, the same situation occurred with the NIF, where the digital-first principle was prioritised above all else. Moreover, in this iteration of the law, the principle of administrative simplification (which includes the digital-first principle) mentions nothing about the fallback of paper-based bureaucracy[46].

[45] Legea nr. 296/2023 privind unele măsuri fiscal-bugetare pentru asigurarea sustenabilității financiare a României pe termen lung, publicată în Monitorul Oficial nr. 977 din 27 octombrie 2023 [Law No. 296/2023 regarding certain fiscal-budgetary measures to ensure the long-term financial sustainability of Romania, published in the Official Journal of Romania No. 977 of 27 October 2023].

[46] Article 5, para 1, letter c), Law No. 242/2022 (Administrative simplification principle): "(i) The public authorities and institutions design or adapt their public services for an electronic working environment, streamlining and simplifying the administrative processes underlying the provision of those public services; (ii) The public authorities and institutions continuously aim to reduce the waiting time for responses to users' requests and the administrative burden on public authorities and institutions, private entities, and individuals".

This was a shift from the 2016 perspective, which used digitalisation as a support system towards complete digitalisation[47]. The shift is made clear from the wording of the principles of non-discrimination, neutrality, and user-centredness[48]. In the NIF, these principles consider information technology as the primary way to deliver public services, and traditional bureaucracy seems to be the exception that guarantees non-discrimination.

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[47] Ordonanța de Urgență nr. 41/2016 privind stabilirea unor măsuri de simplificare la nivelul administrației publice centrale, administrației publice locale și al instituțiilor publice și pentru modificarea și completarea unor acte normative, publicată în Monitorul Oficial nr. 490 din 30 iunie 2016 [Romanian Government Emergency Ordinance No. 41/2016 regarding the establishment of certain simplification measures at the level of central public administration, local public administration, and public institutions, and for amending and completing certain normative acts, published in the Official Journal of Romania No. 490 of 30 June 2016].

[48] Article 5, para 1, letter i), LawNo. 242/2022: "Public authorities and institutions will take measures to make electronic services available to people who rarely or never use the online environment, providing them with additional ways to access public services without additional costs". Article 5, para 1, letter j), LawNo. 242/2022: "(i) When defining an electronic public service, public authorities and institutions will consider functional requirements and avoid imposing any technology or product on partners, to be able to adapt to the continuously evolving technological environment". Article 5, para 1, letter k), Law No. 242/2022: "Public service providers will consider offering services with a friendly, secure, and flexible interface allowing personalisation, delivering services through multiple distribution channels to ensure access in any way, anywhere, and anytime; providing a single point of contact even when various sectors of public administration need to collaborate to deliver the service; and requiring the citizen to provide only the minimum necessary information to obtain the public service". Article 5, para 1, letter l), LawNo. 242/2022: "(i) Public authorities and institutions will use information technology to create equal opportunities for citizens and the business environment through publicly presented and accessible electronic public services without discrimination; (ii) Inclusion involves the right of every person to fully benefit from the opportunities offered by new technologies to overcome social and economic disadvantages and exclusion; (iii) Public authorities and institutions must ensure that electronic public services are accessible to all citizens, including people with disabilities or the elderly". The main theme of these principles is not the creation of an administrative service framework around people's needs but rather the complete digitalisation of the services and the assurance of training and the inclusion of people in the use of e-services. In our opinion, this approach is somewhat risky and could lead to higher levels of discrimination than paper-based bureaucracy, as public authorities are not known for their adaptability and willingness to provide free services to citizens.

A relevant example is the wording of the user-centred principle, where the main debate is around the fact that service providers should have a 'friendly, secure and flexible interface that allows for customisation and should request a minimum of information through this platform'. We also note that human interaction is absent from these public acts, with inclusion implying that *everyone should benefit from the advantages of digitalisation*.

The NIP commits the public authorities to these principles, but the unfortunate wording of these obligations creates a distinction between the provision of these services and the creation of IT systems. Thus, these minimum obligations exist only in relation to the development of tools for the provision of electronic public services and do not go beyond these parameters[49].

Although the National Interoperability Platform Act is the sole legal act outlining general principles for digital administrative procedures and service delivery, it notably does not contain any specific obligation for public bodies. Instead, it offers general recommendations that cannot be translated into sector-specific rules. For instance, there are no clear definitions of efficiency or a user-centred approach, and there are no established remedies or sanctions for the violation of these principles. This absence of specific rules does not incentivise public institutions to develop and implement digital solutions.

The NIF and the NIP Act fail to implement general administrative principles, such as the right to explanation and human involvement[50]. It is important to note that the principles discussed above, such as the right to explanation and transparency obligations, only apply to the creation of the interoperability system. They do not

[49] Chapter 4 of Law No. 242/2022.

[50] M. Pieterse, *Urbanizing Human Rights Law: Cities, Local Governance and Corporate Power*, 23 German L. J. 1212–1225 (2022); B. Custers, *New Digital Rights: Imagining Additional Fundamental Rights for the Digital Era*, 44 Comp. L. & Sec. Rev. 1–13 (2022); D. Freeman Engstrom (ed.), *Legal Tech and the Future of Civil Justice* (2023); M. Lesch & N. Reiners, *Informal Human Rights Law-Making: How Treaty Bodies Use "General Comments" to Develop International Law*, 12 Glob. Const. 378–401 (2023); Y. Shany, *Digital Rights and the Outer Limits of International Human Rights Law*, 24 German L. J. 461–472 (2023); R. Poscher, *Artificial Intelligence and the Right to Data Protection*, in Mueller et alii (eds), cit. at 9.

apply directly to other digital services that fall under general digital administrative services.

6. The Guidelines for Implementing the NIP

The National Interoperability Platform establishes a legal and technical foundation for digital public services. In order to operationalise this framework, the Guidelines for Implementing the NIP set specific rules and standards to ensure its successful implementation. These guidelines are the only provisions that establish specific rules for the delivery of digital administrative services. Although they are directly linked to the National Interoperability Platform and its implementation, we believe that general administrative principles and safeguards for digital governance can be extrapolated from this act.

The Interoperability in the Information Technology and Communication Area (IITCA) guidelines[51] outline several legal requirements related to data exchange and interoperability that could apply to any reliance on A A or AI in public administration. There is a strong emphasis on privacy and data protection, requiring compliance with the GDPR when processing personal data[52].

Regarding cybersecurity measures, participants must implement appropriate security protocols to protect data and information systems. This includes the use of established security protocols such as OAuth 2.0 and JSON Web Tokens (JWT) for authentication and authorisation. OAuth 2.0 is an open standard used for delegated access rights that allows applications to securely access server resources on behalf of a resource owner using an access token[53]. JWT provides a compact and self-contained way to securely transfer

[51] Ordinul nr. 21.286/2023 privind aprobarea Normelor de referință pentru realizarea interoperabilității în domeniul tehnologiei informației și al comunicațiilor (NRRI), publicat în Monitorul Oficial nr. 1000 din 3 noiembrie 2023 [Order No. 21,286/2023 regarding the approval of the Reference Standards for achieving interoperability in the field of information technology and communications (RSI), published in the Official Journal of Romania No. 1000 of 3 November 2023].

[52] Chapter 3 NRRI.

[53] Chapter 2, letter o) and Chapter 5 para 4 NRRI.

information between parties as a JSON object that is digitally signed for verification[54].

The quality and integrity of datasets and records are also critical, with a focus on ensuring data validity, consistency, accuracy, and coherence. Measures to ensure data validity and consistency are critical for reliable data exchange and interoperability[55]. Regarding transparency obligations, users have the right to be informed or notified when their data are accessed through the Media and Notification Platform, ensuring that every citizen is aware of when their data are used[56]. In addition, the right to access information is guaranteed through the Single Contact Point (PDUro), which provides citizens with access to their personal data[57].

Public authorities must comply with the technical and semantic standards defined by the NRRI to ensure interoperability and consistent data exchange. This alignment aims to harmonise with the European architecture that is dedicated to interoperability[58]. The standards emphasise the use of REST APIs for technical interoperability, with recommendations to use the OData protocol to ensure consistency in data exchange[59]. Semantic standards such as RDF (Resource Description Framework) and OWL (Web Ontology Language) enable standardised, interoperable information descriptions and links[60]. The National Semantic Catalogue (semantic.gov.ro) is a system for configuring, managing, and recording semantic resources used by entities and institutions in Romania. It ensures semantic interoperability by providing updated information on available assets and relevant metadata[61].

The need for mandatory human involvement and accountability is addressed by requiring administrators to ensure that their staff is adequately trained and understands their responsibilities.

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[54] Chapter 2, letter p) NRRI.
[55] Chapter 1 para 1 letter f) and para 2 NRRI.
[56] Chapter 1 para 1 letter h) and para 2 NRRI.
[57] Chapter 1 para 1 letter g) and para 2 NRRI.
[58] Chapter 5 para 1 NRRI.
[59] Chapter 5 para 4 NRRI.
[60] Chapter 2 letter j) and k) NRRI.
[61] Chapter 4 para 5 NRRI.

This includes training on the use of security protocols, data exchange standards, and compliance with European regulations[62].

Furthermore, there are provisions for the right to obtain a remedy, with procedures established for users to suggest improvements and address issues, allowing for suggestions to improve processes and the platform itself[63]. While these requirements are framed in the context of data exchange and interoperability, they collectively establish a legal framework for AA and AI, explicitly addressing privacy, security, data quality, transparency, and user rights concerns.

The legal requirements derive from both pre-existing norms and new technology-oriented rules. Pre-existing legal provisions include the GDPR, which provides the foundational framework for data protection and privacy[64]. Law no. 242/2022 introduces technology-oriented rules, establishing a new legal framework for data exchange between IT systems and creating the NIP. Additionally, the Reference Norms for Achieving Interoperability (NRRI) introduce new standards and procedures designed to improve interoperability, setting the conditions and terms of compliance through a joint technical and semantic core[65].

Moreover, new rules define technical and semantic standards specific to digital transformation and data interoperability. These standards can be discussed with software developers, demonstrating an adaptive approach to evolving technological needs (Technical Interoperability Standards)[66]. The alignment with European interoperability frameworks ensures that national standards are consistent with European architectural standards, including digital identity and electronic services[67].

The Romanian Digital Authority manages the NIP, primarily developing and administering data exchange and interoperability technologies[68]. The RDA's roles and responsibilities include

[62] Chapter 3 para 1 point 1 and 2 NRRI.
[63] Chapter 3 para 1 point 1 and 15 NRRI.
[64] Chapter 3 para 3 point 2 NRRI.
[65] Chapter 1 NRRI.
[66] Chapter 5 para 5 NRRI.
[67] Chapter 1 para 3 NRRI.
[68] Chapter 3 para 1 NRRI.

developing and maintaining the components of the NIP, administrating the National Registry (NR), establishing and maintaining security requirements, and providing support and training for participants[69].

Additionally, the RDA is responsible for developing Application Programming Interfaces (APIs) necessary for public institutions to connect to the NIP, especially if they need more technical capacity to develop them independently. The RDA will develop APIs free of charge on request for data consumers within the NIP, including central and local public institutions[70]. These APIs are designed according to best practices in API design, testing, and management, taking into account aspects such as semantics, security, and consistency[71]. Monitoring and testing are emphasised to ensure the API's reliability, security, and optimal performance[72].

The development of these technologies is primarily managed by a public entity – the RDA. The guidelines do not explicitly mention the involvement of private or hybrid entities in the development of algorithmic technologies within the context of public administration.

The guidelines require training measures for staff members and employees involved in utilising these technologies. The NIP (RDA) administrator must ensure that staff have the necessary knowledge and are able to use the tools associated with their duties efficiently[73]. This includes training on security protocols like OAuth 2.0 and JWT, data exchange standards such as REST APIs and OData, and compliance with regulations such as GDPR and eIDAS[74].

The RDA is tasked with providing appropriate oversight to ensure compliance with information-related regulations, norms, and instructions[75]. Administrators of base registries are required to appoint a responsible person for each registry and to organise professional training programmes. This ensures that both staff and third parties

[69] Chapter 3 para 1, Responsibilities NRRI.
[70] Chapter 5 para 4 NRRI.
[71] Chapter 5 para 4 NRRI.
[72] Chapter 5 para 4 NRRI.
[73] Chapter 3 para 3 NRRI.
[74] See https://digital-strategy.ec.europa.eu/en/policies/eidas-regulation, accessed 15 September 2024.
[75] Chapter 3 para 1 NRRI.

acting on behalf of the administrators have adequate knowledge of the rules, regulations, and instructions relating to information management processes[76].

Therefore, both the RDA and the base registry administrators must implement training measures to ensure their staff are adequately prepared to use the technologies related to data exchange and interoperability.

The provisions outlined in the IITCA guidelines establish a comprehensive framework for data exchange, interoperability, security, and compliance within the Romanian public administration. These standards are adequate in scope and depth to support a large, complex digital interoperability plan such as the NIP. They cover essential aspects such as compliance with European regulations, security protocols, data exchange mechanisms, semantic interoperability, and governance structures. By adhering to these standards, the public administration is well-placed to implement a robust and effective interoperability platform.

However, while the existing provisions provide a strong foundation, they are not sufficient for the full integration of AI technologies. The current guidelines provide some guidance in areas such as data protection and privacy compliance, cybersecurity measures, data quality and integrity, and the establishment of technical and semantic standards. These elements are critical for AI systems that rely on large data sets and require secure, interoperable environments for data exchange. The NIP provides a centralised infrastructure that supports the aggregation and dissemination of data necessary for AI applications. The mandatory training also ensures that personnel are adequately prepared to work with advanced technologies, including AI. These aspects can be effectively adapted to support AI and automation in public administration.

The provisions lack specifics on AI ethics, transparency, accountability, and governance. Ethical guidelines and standards for AI development, including strategies for bias mitigation and fairness assessments, need to be established to prevent discrimination and ensure equitable AI applications.

[76] Chapter 3 para 2 NRRI.

Furthermore, transparency and explainability requirements for AI systems used in public administration should be mandated in order to enhance accountability and build public trust[77]. Requiring thorough impact assessments before AI systems are deployed and establishing oversight bodies to monitor their societal impact are essential steps to address potential legal and ethical challenges. Strengthening user rights, including the ability to understand and contest decisions made by AI systems, ensures that individuals are not adversely affected without recourse[78]. Implementing strict guidelines for the quality and governance of datasets used to train AI models is also critical to prevent biases and errors within AI systems.

By supplementing existing regulations with these AI-specific measures, the public administration can reap the benefits of AA and AI while safeguarding against potential risks. Ongoing evaluation and adaptation are essential to address any challenge that may arise in the implementation of such technologies. Effective implementation, inter-agency collaboration, and a sustained commitment to maintaining and updating the systems and standards are crucial for the long-term success of integrating AI into public services.

The current standards provide a solid foundation for digital interoperability and can be adapted to support the implementation of AI in several areas. However, to fully embrace AI and automation, it is imperative to develop additional legal frameworks and guidelines that specifically address the unique challenges posed by AI technologies. This approach would ensure that AI implementation aligns with ethical standards, legal obligations, and public expectations, ultimately contributing to more efficient, transparent, and trustworthy public administration.

[77] C. Coglianese, cit. at 7; S. Ranchordás, cit. at 7; A. van Deursen & W.J. Pieterson, *The Internet as a Service Channel in the Public Sector* (2006), presented at the 56th Annual Conference of the International Communication Association (2006), at https://ris.utwente.nl/ws/portalfiles/portal/5950101/Deursen06internet.pdf, accessed 15 September 2024.
[78] J. Wolswinkel, cit. at 8.

7. A Gap Between Official Policies and Unofficial Practices

To test the implementation of digital policies in real world administration, we prepared thirty-seven questionnaires to determine whether specific administrative procedures or services rely on AA or AI. These questionnaires were sent to the National Digital Authority and the most significant Romanian municipalities, covering the entire geographical area. Romania is divided into seven central regions. We selected twenty-two representative county seats from each region[79], and ten public institutions, the Romanian Digital Authority and public service providers in the capital city (such as the transport, parking, and energy sectors).

We asked the municipalities if they had implemented such technologies and for which services, requesting information about the specific infrastructure or algorithms used. We also inquired whether there were internal provisions regarding self-imposed limitations, bans, or boundaries concerning citizens' rights and the public interest. The questionnaire further asked whether specific training had been pursued and whether the development was in-house or outsourced.

We received twenty-eight responses, seven notifications of response delay (one from Bucharest's first district and all requests from the Romanian Digital Authority), and two unanswered questionnaires. The authorities' general response was that the public body has "*no projects involving algorithm automation or artificial intelligence neither in progress nor in the planning phase*".

The only exception was the Bucharest Investment Authority, which informed us that two projects had been started regarding Smart & Green Mobility for the Bucharest-Ilfov area that might involve AA and AI. The project aims to alleviate congestion at some of the most crowded crossroads between Bucharest and Ilfov using smart traffic lights and automatic traffic management through digital solutions. The authority did not specify that automation and AI would be used, stating that "*the technical solutions that will be used in project implementation will be determined later*".

[79] Two from the West Region, three from the Northwest Region, three from the Northeast Region, three from the Southeast Region, seven from the South Region (including the capital city), one from the Southwest Region and three from the Central Region.

We followed these findings with anonymous interviews with public servants from both local and central administrations. To ensure that responses would be sincere and the respondents unidentifiable (as public servants can be punished by law if they do not adhere to specific criteria in drafting documents), we did not record any information about the respondents other than their responses and the type of public body where they worked. We gathered nine responses based on the initial findings. No public projects involved AA or AI at any of the public authorities where they worked.

However, 90% of the public servants mentioned that they or their colleagues had used generative chatbots (such as ChatGPT) to create internal reports and operational guidelines. Two respondents acknowledged using ChatGPT to respond to citizens' requests or to help them formulate such responses.

A central issue identified in our discussions with the interviewees was that almost none informed anyone about the use of these technologies (only one person told a superior), and none of these public servants informed the public regarding the use of these technologies. Another aspect is that employers provide no specific training concerning digital technologies, and it almost seems a taboo subject in day-to-day public administration.

Our investigation reveals a significant gap between the Romanian public authorities' official stance and individual public servants' actual practices regarding AA and AI. While formal responses uniformly deny any implementation or planning of such technologies, our anonymous interviews indicate that most public servants are independently using generative AI tools like ChatGPT for internal reports, operational guidelines, and even in communications with citizens without informing their superiors or the public. This clandestine use of AI technologies raises concerns about transparency, accountability, and the protection of citizens' rights. The absence of official policies, training, and open discussion on digital technologies within public administration hinders the responsible adoption of AI. It creates a culture of secrecy and reluctance to innovate. The fact that public servants feel unable to disclose their use of AI tools – even to their superiors – highlights a need for organisational change.

To bridge this divide between policy and practice, public authorities must develop clear guidelines and provide training on AI

and automation. By fostering transparency and openly embracing digital innovation, authorities can ensure that AI technologies are used ethically and effectively, benefiting the public sector and the citizens it serves.

8. Final Considerations

Building on our earlier discussion, some observations are worth mentioning. We highlight that a distinction must be made between automated administrative decisions (ADM) – which provide outcomes solely through automated algorithms – and automated document provision (ADP), which involves no discretion. While ADM should be able to mimic the public servants' decision-making process, the latter represents the use of technology for simple, often repetitive, tasks where the program assesses nothing but simply checks the existence of specific data and provides a preprepared (template) document based on that, which, from the Romanian law standpoint is more an administrative operation than an administrative act/administrative decision. The ADP may still use private or sensitive data, but it does not make judgement calls, ultimately returning the same result for all iterations. It is simply an automated box-checking machine and a form-filler, replacing the clerk who would usually do this tedious task.

Since 2009, Romania has embarked on an 'algorithmic race', significantly transforming the delivery and regulation of governmental services. The establishment of public e-services portals led to the creation of the Romanian Digitalisation Authority and platforms like the National Interoperability Platform, aiming to improve public service efficiency and foster interconnectivity among governmental databases. Following the previous clarifications, we can state that various sectors use automation algorithms, particularly in document provision services.

To use these services, the individual must have an account and input their identification data, and they will automatically receive documents such as their tax record, good conduct certificate, or criminal record. Furthermore, something similar exists for legal persons in matters of reserving a name for a business or an NGO.

For instance, in urbanism and building permits, applications for Urbanism Certificates or notifications regarding the commencement of

works can be submitted via e-governance platforms like eDirect (PCUe)[80]. These services automate the issuance of necessary permits once all required information is provided, processing applications that do not require discretionary decision-making. Similarly, businesses can efficiently obtain operating licences for retail and wholesale trade activities, with automation relying solely on verifying that all necessary documents are submitted[81]. Funeral and cemetery services also benefit from automation, simplifying processes for individuals seeking concession contracts for burial plots or certificates of burial plot concession. Construction and infrastructure approvals are managed through automated systems that issue approvals without legal analysis or discretionary judgement, provided the application is complete.

In some cities, automation extends to the use of text messages for payments. For instance, individuals may send a specific text message to pay for public transport tickets or parking, receiving a receipt in return, with the charge applied to their phone bill. Similar services are available through web platforms for paying fines, road access fees (Vignette), court fees (judicial stamp duties), and other taxes.

Despite these advances, the legal framework is not yet ready to integrate AA and AI. The primary administrative laws, including the Administrative Judicial Review Act and the Administrative Code, lack specific provisions on the use of AI and algorithmic processes in public administration. Existing legislation imposes general obligations for

[80] Services related to urban planning are accessible through the e-governance platform (eDirect – PCUe), such as the Application for Urbanism Certificate, Application for Extension of Urbanism Certificate, Application for Extension of Building Permit, and Notification Regarding the Commencement of Works Execution. These services automate certificate and permit issuance for construction and development. They streamline the process by checking for the completeness of submitted information with no discretionary decision-making.

[81] Businesses can obtain various operating permits through automated services: Operating Permits for Retail Trade Activities (including cash and carry trade, ambulant trade, and service provision activities other than vehicle maintenance and repair), Operating Permits for Wholesale Trade Activities, Notification of Clearance Sales, Notification of Liquidation Sales. These services facilitate commercial activities by automating the issuance of necessary permits based solely on verifying that all required documents are provided.

digitalisation but fails to provide guidelines or safeguards specific to AI technologies, leaving a gap in legal protection and citizens' rights.

The NIF and NIP introduced principles to promote interoperability, user-centred services, and inclusivity. However, these principles are often broad and need more enforceable commitments or detailed implementation guidelines. The focus has shifted towards a 'digital-by-default' and 'digital-first' approach, sometimes at the expense of accessibility and fairness. Traditional service delivery means are not adequately preserved, potentially excluding people who lack digital access or skills.

The Guidelines for Implementing IITCA offer more specific measures related to data exchange, cybersecurity, and compliance with European regulations such as the General Data Protection Regulation (GDPR) and eIDAS. They establish the basic protocols and standards necessary for a robust digital infrastructure, including the use of security protocols such as OAuth 2.0 and JWT, data exchange standards like REST APIs and OData, and semantic standards such as RDF and OWL.

While these guidelines provide a strong foundation for digital interoperability, they are not sufficient to fully integrate AI technologies into the public administration. Critical areas such as AI ethics, algorithmic transparency, accountability in AI decision-making, and user rights concerning AI-generated outcomes remain unaddressed. There is a lack of specific legal frameworks that mandate transparency in AI systems, require impact assessments, or establish legal accountability for AI-driven decisions. In addition, there are no provisions for the rights of users to understand or contest decisions made by automated systems, which is crucial for maintaining trust and fairness.

When examining the public debate on using artificial intelligence and automated decision-making in Romania, we find that discussions are predominantly technical, focusing mainly on STEM fields. There is little academic discourse on these technologies within administrative law. The few scholarly debates that exist are primarily

concerned with criminal law[82] or the impact of AI on labour law[83], seldom addressing the use of algorithms in interactions between public administration and citizens.

Our research, supported by surveys, highlights a lack of comprehensive digitalisation training for public servants and no specific training on using automated decision-making systems or AI. This absence clearly leads towards risks. According to our survey, some public servants use AI tools like ChatGPT in their personal tasks and even in their professional duties without disclosing this to the public or, often, to their superiors. This hidden use raises concerns about transparency, accountability, and the protection of citizens' rights.

In the judicial sector, there is no automation or use of AI in the decision-making processes of judges or clerks. The only notable instance of automation is the random assignment of cases to judges through an algorithm that considers the complexity of each case. However, there is a risk that judges or court clerks might use AI tools in their work without disclosure or proper training, introducing additional risks, as we observed in the scenario of public servants.

In order to fully harness the benefits of AA and AI, it is imperative to develop additional legal frameworks and guidelines that specifically address these technologies. This includes establishing ethical standards for AI development, implementing strategies for bias mitigation and fairness assessments, and mandating transparency and explainability in AI systems. Conducting thorough impact assessments before deploying AI solutions and enhancing user rights to contest and understand AI decisions are essential to building public trust and ensuring accountability.

The ongoing research involving public information requests to various government bodies underscores the necessity for greater transparency and understanding AI role in public administration. Preliminary findings suggest that citizens may not be aware of the

[82] L. Stănilă, *Inteligența artificială: o provocare pentru dreptul penal*, Revista Română de drept penal al afacerilor 75 (2018).
[83] L. Georgescu, *Revista Romana de Dreptul Muncii*, 6 *Revista Romana de Dreptul Muncii* 35–40 (2019).

extent to which algorithmic processes influence administrative decisions, highlighting the importance of disclosure and education.

In conclusion, while Romania has made significant progress in digitalising its public administration, the legal framework still needs to be adapted adequately to the challenges posed by 'algorithmisation'. The existing standards provide a solid foundation for digital interoperability but must be expanded to encompass the complexities of AI and AA. By developing a comprehensive legal framework and adopting best practices for AI implementation, Romania can ensure that technological advances align with ethical standards, legal obligations, and public expectations. This approach will contribute to more transparent, accountable, and user-centric public services, ultimately strengthening the relationship between the government and its citizens in the administrative digital age.

THE LAW OF THE ALGORITHMIC STATE IN SERBIA

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Abstract

Serbia, like many other countries, is in the process of reforming its legislation to accommodate artificial intelligence-driven systems. The country has made some progress with investment in artificial intelligence (AI) research and development, the creation of IT infrastructure to support the future introduction of AI in the public sector, and the establishment of a strategic framework. While there is no binding national legislation solely dedicated to AI, the Strategy for Development of Artificial Intelligence in the Republic of Serbia for period 2020-2025 lays the ground for integrating AI in sectors such as health, education, and public administration. It was supplemented by the adoption of Ethical Guidelines for Development, Application and Use of Reliable and Responsible Artificial Intelligence. The forthcoming Strategy 2024-2030 aims to further these goals, while addressing concerns about data protection and the ethical application of AI and is expected to be followed soon by a dedicated piece of legislation that will regulate the use of AI in detail. Despite the efforts made to increase the use of AI in public administration, in practice it is still limited, and this paper examines a few examples of current or intended use. Even though Serbia is not part of the European Union, it strives to become a Member State, which entails aligning with the European Union *acquis communautaire* in all areas.

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Given the recent enactment by the EU of the first-ever regulation on AI – the Artificial Intelligence Act (AI Act) – it can be expected that Serbia will follow the lead and prepare a draft Law on AI that will be (for the most part) aligned with the AI Act. It can be concluded that the wider use of AI technologies by the public in administration in Serbia will have to wait for both the establishment of the infrastructural/technical architecture for its application and the legislative alignment of a number of legislative acts before it can be fully implemented.

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1. Introduction: AI and Serbian Public Administration

The rapid advancement of artificial intelligence (AI) technologies has prompted countries worldwide to reconsider their regulatory frameworks[1]. It is becoming increasingly evident that AI is rapidly evolving, sparking debates among both scholars and legal practitioners on the future development and human rights implications of its use in general and by the public administration in particular, with a special reference to accountability mechanisms[2]. In the United States, for instance, Citron has underlined the concept of 'Technological Due Process', highlighting the need for individuals to have the right to challenge and understand the automated decisions

[1] J.B. Bullock, *Artificial Intelligence, Discretion, and Bureaucracy*, 49(7) Am. Rev. Pub. Admin. 751–761 (2019).

[2] See M. Busuioc, *Accountable Artificial Intelligence: Holding Algorithms to Account*, 81(5) Pub. Admin. Rev. 825–836 (2021); D. Bogiatzis-Gibbons, *Beyond Individual Accountability: (Re-)Asserting Democratic Control of AI*, in *The 2024 ACM Conference on Fairness, Accountability, and Transparency (FAccT '24)* (2024) 74–84, https://doi.org/10.1145/3630106.%203658541.

that affect them[3]. Further considerations on the relationship between law and AI have also emerged in both legal and non-legal scholarship, emphasising how the growing autonomy of AI imposes a radical reflection on human rights protections.

Serbia, like many other nations, is in the process of reforming its legislation to accommodate AI-driven systems, with an emphasis on ethical standards, transparency, and alignment with relevant EU standards. While there is no binding national legislation solely dedicated to AI, Serbia's Strategy of Development of Artificial Intelligence in the Republic of Serbia for the period 2020-2025 lays the ground for integrating AI in public sectors such as health, education, and *public administration*[4]. It was supplemented by the adoption of Ethical Guidelines for Development, Application and Use of Reliable and Responsible Artificial Intelligence (hereinafter 'Ethical Guidelines')[5]. The forthcoming *Strategy 2024-2030*[6] aims to further these goals, while addressing concerns about data protection and the ethical application of AI and is expected to be followed soon by a dedicated piece of legislation that will regulate the use of AI in detail[7]. Currently, Serbia is ranked 57 out of 193 jurisdictions observed in the

[3] D. Citron, *Technological Due Process*, 85(6) Wash. U. L. Rev. 1249–1313 (2008).

[4] Government of Serbia, *Strategija razvoja veštačke inteligencije u Republici Srbiji za period 2020-2025. godina* [Strategy of Development of Artificial Intelligence in the Republic of Serbia for period 2020-2025] (2019), Official Gazette of RS, no. 96/2019.

[5] Government of Serbia, *Zaključak o usvajanju etičkih smernica za razvoj, primenu i upotrebu pouzdane i odgovorne veštačke inteligencije* [Conclusion on Adoption of Ethical Guidelines for Development, Application and Use of Reliable and Responsible Artificial Intelligence"], Official Gazette of RS, no. 23/2023.

[6] Serbian Ministry of Science, Technological Development, and Innovation, *Draft Strategy for the Development of Artificial Intelligence* (2024), at https://nitra.gov.rs/images/vesti/2024/13-06-2024/10062024%20Strategija%20VI%202024-2030%20javna%20rasprava.pdf, accessed 22 September 2024. See also https://www.ai.gov.rs/vest/en/1020/extension-of-the-public-debate-period-on-the-draft-strategy-for-the-development-of-artificial-intelligence-in-the-republic-of-serbia-for-the-period-2024-2030.php, last accessed 22 September 2024.

[7] As communicated by the Ministry in charge of preparing the draft, the envisaged deadline for the first draft of the Law is 31 March 2025. For further information, see https://www.ai.gov.rs/vest/en/948/first-meeting-of-the-working-group-for-drafting-the-artificial-intelligence-law-of-the-republic-of-serbia-held.php, last accessed 22 September 2024.

Government AI Readiness Index 2023[8] and 55 out of 138 countries and jurisdictions observed in Global Index on Responsible AI[9].

One of the goals of the Strategy 2020-2025, which is also emphasised in the draft Strategy 2024-2030, is the encouragement of use of the AI in the public administration[10]. Therefore, although there is no mandatory legal framework for the development and use of AI, the acts in force, which consist of the Strategy 2020-2025 and the Ethical Guidelines, provide the (legal) basis for the use of AI in public administration and all the more so encourage further development of AI in that regard. Indeed, up to now, the use of AI in the country in general, and by the public administration in particular, has remained limited. Having this in mind, it is also clear why so far there have been no litigation procedures against the public administration in relation to reliance on automated algorithms and/or AI systems. However, in the past few years, the scholarly interest and debates on the AI have drastically increased in Serbia. There are now several annual conferences on AI in the country, mostly focusing on technical aspects of AI development[11]. However, other aspects of the use of the AI systems are also starting to be recognised as important, mainly in relation to legal matters. Hence, various business organisations and universities organise seminars and conferences on these topics[12]. Against this context, legal scholarship has not yet devoted proper attention to the general use of AI in the country or its (potential) use by the public administration, with the notable exception of Jovanović

[8] See https://oxfordinsights.com/ai-readiness/ai-readiness-index/, last accessed 29 September 2024.
[9] See https://www.global-index.ai/Countries, last accessed 29 September 2024.
[10] Serbian Ministry of Science, Technological Development, and Innovation, cit. at 4, section 6.4.5, measure 4.5.
[11] See https://datasciconference.com/, last accessed 22 September 2024; see also https://emerge.ifdt.bg.ac.rs/, https://www.mi.sanu.ac.rs/~ai_conf/index.html, accessed 22 September 2024.
[12] See https://aksakademija.edu.rs/lat/vest/seminar-uia-bridging-the-gap-between-law-and-technology:-the-role-of-lawyers-in-ai-digitalization-and-data-protection-novi-sad-19-i-20-septembar-2024-godine-88.html, last accessed 22 September 2024.

and Andonović[13], who have analysed whether, and to what extent, administrative decision-making could be done with the aid of the AI.

Even though Serbia is not a member of the European Union, it strives to become a Member State, which entails aligning with the European Union *acquis communautaire* in all areas. Given the recent enactment by the EU of the first-ever regulation on AI – the Artificial Intelligence Act (AI Act), adopted by the European Union in 2024[14] – it can be expected that Serbia will follow the lead and prepare a draft Law on AI that will be (for the most part) aligned with the AI Act. Therefore, the standard set of legal challenges related to the use of AI – risk management, transparency, and human oversight, reflecting the complex intersection between AI, governance, and human rights – is expected to be addressed by the binding legal acts that, in future, will transpose the contents of the AI Act in Serbia. This paper focuses on the present situation and reflects legislative and policy developments until September 2024. The next sections explore the current regulatory framework for AI in Serbia (section 2), the current (limited) use of AI within Serbian public administration (section 3), and the international legal influences shaping Serbia's AI governance (section 4).

2. The Regulatory Framework in Serbia

In the Republic of Serbia there is no binding legislation that regulates either the general use of algorithmic automation and AI or its use by the public administration. However, with the rapid development of technologies, the Government has recognised the importance of the use of digital technologies and subsequently AI in public administration, which was one of the reasons for the adoption, in 2019, of the Strategy of Development of Artificial Intelligence in the Republic of Serbia for the period 2020-2025 ('Strategy 2020-2025'). Strategy 2020-2025 was the first act to regulate and envisage the use

[13] Z. Jovanović & S.N. Andonović, *Automated Decision Making in Administrative Procedure*, 3 NBP – Nauka, bezbednost, policija 59–69 (2020).

[14] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act).

and development of AI in Serbia. As a general act, it covered topics from the introduction of AI in the educational system up to the use of AI in business environments and included a section on the development of AI for use in public administration. In addition, the Strategy for Public Administration Reform in the Republic of Serbia for the Period 2021-2030 adopted in 2020 underlines that "efficient provision of quality services will also depend on the capacity of the organs of public administration to effectively use large data sets, AI and block chain technology to quickly identify spaces for optimising existing and developing new services"[15]. It also states that "the potential of using AI in service delivery is enormous − from better resource allocation, replacement of expert support in solving simpler challenges to summarising large sets of different types of data that are collected in public administration but still insufficiently analysed"[16].

The (unexpectedly) rapid development of AI prompted the Government to initiate the preparation of a new Strategy of Development of Artificial Intelligence in the Republic of Serbia even before the current one expires, and covering the period 2024-2030[17]. The public discussion on the draft of the Strategy 2024-2030 was held in July 2024 and it is expected that the new Strategy will be adopted shortly. However, at the date in which this paper was written, the text of the draft Strategy was available to the public, but the text of the final proposal of the Strategy 2024-2030 was not publicly available. Since no substantial changes are expected to be made in the text, the paper will make reference to the draft document. The current draft of the Strategy 2024-2030 provides an overview of the progress that has been accomplished and adjusts the goals envisaged by Strategy 2020-2025 in line with the changes that occurred in the meantime. The most progress is seen in the educational sector and in setting up the environment for the development of AI, which lays the ground for the use of AI in practice in accordance with established ethical principles[18].

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[15] Government of Serbia, *Strategija reforme javne uprave u Republici Srbiji za period od 2021. do 2030. Godine* [Strategy for Public Administration Reform in the Republic of Serbia for the Period 2021-2030] (2020), 18.

[16] Government of Serbia, cit. at 15, 149.

[17] Serbian Ministry of Science, Technological Development, and Innovation, cit. at 6.

[18] Serbian Ministry of Science, Technological Development, and Innovation, cit. at 6.

As there are no mandatory regulations concerning the use of AI in the public administration, there are no prescribed mandatory requirements specific to AI that need to be fulfilled. However, the general rules of administrative law[19] would apply to systems and processes based on AI as they do to other procedures. The Strategy 2020-2025 acknowledges that the use of AI is accompanied by significant concerns, and thus sets a special goal concerning ethical and safe application of the AI[20]. One of the main concerns pertains to data protection, due to the large amount of data processed for these purposes. Further, the application of AI systems can pose risks of discrimination for several reasons, such as the criteria used, the use of data perpetuating historical discrimination, misbalanced data, the failure to include relevant sources, etc. Hence, it is important to take all measures necessary to ensure that the prescribed data protection requirements are fulfilled, along with other mandatory requirements applicable to the specific case to prevent discrimination and non-compliance with the regulations in force.

Strategy 2020-2025 envisages the following areas – health, agriculture and forestry, transportation and smart cities – as areas of public interest which should be given primary support for implementation of AI systems[21]. Apart from that, special emphasis is placed on adjusting and improving the education system from primary to university level, in order to prepare future generations for working with AI-based systems and other interested people to adjust their skills and certifications to new circumstances[22]. The Strategy 2020-2025 strives to encourage the development and use of AI systems both in general and with regard to the public administration, as this is the area in which the Government has greater influence and can directly decide on the technologies to be used. Funds and incentives for the development of AI systems are available to everyone, i.e., the Government does not reserve the right to exclusively develop AI

[19] More on general principles and sector-specific rules on Serbian administrative law, see M. Milenković, *Serbia*, in G. della Cananea & J.-B. Auby (eds), *General Principles and Sector-Specific Rules in European Administrative Laws* (2024) 58–63.

[20] Government of Serbia, cit. at 4, section 6.5.

[21] Government of Serbia, cit. at 4, section 6.3.2.3.

[22] Government of Serbia, cit. at 4, section 6.1.1, measure 1.1; section 6.1.2, measure 1.2; sections 6.1.3, measure 1.3; section 6.1.4, measure 1.4.; section 6.1.5. measure 1.5.

systems for public administration. Therefore, public authorities can implement systems developed by public, private, or hybrid entities, as long as they are in accordance with the regulations in force, and in particular with the Ethical Guidelines.

As underlined by the Strategy, the development of AI systems goes hand in hand with the development of the skills of employees and the other staff members who use these systems. Strategy 2020-2025 does not envisage the training of the employees and staff members in the public administration as a separate goal, but includes such training in the goal regarding the improvement of education opportunities in relation to AI. This is thought to be achieved by having public employees and staff members take part in special courses, trainings, workshops, etc[23]. Draft Strategy 2024-2030 specifically envisages organising training and workshops for public administration employees as a part of the incentives to promote the further introduction of AI-based systems in public administration. The main topics of the workshops and training should be learning about the advantages of AI technologies and their application in practice. The long-term goal, as envisaged, is to have future generations of employees who will already have the skills for working with AI systems as a result of the educational system that includes learning about AI at all educational levels[24].

Strategy 2020-2025 further envisages the collection, storage and reuse of data both from both the public and private sectors. However, given the sensitivity of any activity regarding the collection of data and their reuse, it also envisages the necessity to complete extensive preparatory actions. In this regard, it should be noted that in 2017, Serbia launched the Open Data Portal, an initiative commenced by nine institutions that disclosed their own data and forty-five sets of data, now involving 111 organisations and 2198 sets of data[25]. The possibility of reusing data was first introduced in the Law on Electronic Administration of 2018, which enabled anybody to reuse the

[23] Government of Serbia, cit. at 4, section 6.1.4, measure 1.4.
[24] Government of Serbia, cit. at 4, section 4.4.3.
[25] See https://www.ite.gov.rs/tekst/en/30/open-data-portal.php, last accessed 22 September 2024.

data in commercial or non-commercial purposes[26]. Further, the same Law envisaged the obligation of public administration bodies to publish their data in a manner that enables easy search and reuse[27]. The data derived from the public sector, such as those concerning companies' business, healthcare and transportation data, are defined as priority data for disclosure and reuse. Firstly, it is necessary to precisely determine the exact collections of data that should be targeted as a priority and then perform a feasibility study concerning the possibility of opening them in the short or middle term. Once the analysis is performed and the relevant collections are identified, it should be confirmed whether a legal and technical framework for collection and reuse of such data exists. If not, it is necessary to first create an appropriate legal framework, organisational method and technical mechanism for such data processing. Further, ownership of the relevant data should be assessed and, if necessary, the regulatory framework should be updated and adjusted in relation to contractual and property regulations, as well as intellectual property regulations. Bearing in mind that some initiatives for opening the data of institutions already exist, it is extremely important to ensure that the data relevant for the development of AI are also placed within the scope of such initiatives[28]. With regard to data from the private sector, disclosure is even more complicated, due to the diversity of data and the lack of an obligation to open and make the data available. Similarly, like the data from the public sector, it is first necessary to assess which data would be valuable for the purposes of developing AI, and then to perform a feasibility study to show the possibility of disclosing them in the short to mid term. Strategy 2020-2025 also envisages also the voluntary donation of free data. It also envisages the possible introduction of a compulsory system for opening and making data available through a public procurement process[29].

In conjunction with the preparation of (overdue) legislation for the use of AI, the Government has undertaken a number of steps to

[26] See Article 25 of the Law on Electronic Administration (*Zakon o elektronskoj upravi*), Official Gazette of RS, no. 27/2018.
[27] See Article 27 of the Law on Electronic Administration.
[28] Government of Serbia, cit. at 4, section 6.4.3. measure 4.3.
[29] Government of Serbia, cit. at 4, section 6.4.3. measure 4.3.

prepare an (adequate) infrastructure for storing and archiving data. With regard to data storage, it was decided to have one large, centralised database rather than multiple smaller ones. Thus, in 2019 the work to build the State Data Centre commenced, and it opened in 2020. The Centre meets the Tier 3+ standard, and its services are provided in accordance with the ISO 27001 security standard, as well as ISO 9001 quality standards and ISO 20000 service quality standards. It stores the data of citizens and institutions, and provides the Government cloud service, that is, the necessary infrastructural resources to government bodies. Resources in the State Data Centre are offered to government bodies according to the IaaS (Infrastructure as a Service) model, i.e., virtual server resources are issued according to the user's request. By using this model, users are freed from investmenting in their own equipment and storage space as all of this is provided by the State Data Centre[30]. Given that the key factor for developing AI systems is access to a large amount of relevant data, the work done on regulating the disclosure of data and building modern and reliable infrastructure for storage of data was the necessary precondition for further development of the AI systems. Besides the data made available by government bodies and institutions, it is also recognised that it is crucial to encourage business entities to disclose their data. Thus, the draft Strategy 2024-2030 envisages similar measures as Strategy 2020-2025, i.e. to incentivise making partnerships with the private sector that will include disclosure[31]. As underlined by the draft Strategy, efforts and work on developing a centralised data base (the State Data Centre) will continue, with the ultimate goal of having all data in one place, in an easily accessible format[32].

In order to mitigate these specific concerns, Strategy 2020-2025 envisaged adopting ethical guidelines that should be drafted in accordance with the Ethics Guidelines for Trustworthy Artificial

[30] See further Serbian Ministry of Science, Technological Development, and Innovation, cit. at 6, section 3.3.4 and https://www.ite.gov.rs/tekst/en/24/government-data-center.php, accessed 22 September 2024.
[31] Serbian Ministry of Science, Technological Development, and Innovation, cit. at 6, section 4.5.2.
[32] Serbian Ministry of Science, Technological Development, and Innovation, cit. at 6, section 4.5.1.

Intelligence issued by the European Commission[33]. The Ethical Guidelines by the European Commission prescribe following principles as a basis for ethical use of the AI systems, not excluding any other appropriate principle: explainability and verifiability, dignity, and the prohibition of damages and righteousness. Based on the stated principles, the Ethical Guidelines issued by the European Commission envisage conditions determined through the following categories: action (mediation, control, participation) and supervision, technical reliability and safety, privacy, personal data protection and data management, transparency, diversity, non-discrimination and equality, social and environmental well-being, and liability. At the international level, the United Nations, through the United Nations System Chief Executives Board for Coordination, also endorsed the Principles for the Ethical Use of Artificial Intelligence in the United Nations to achieve ethical AI use[34]. In particular, the United Nations promotes the principle of 'do no harm' by extending it to all phases of the life cycle of AI systems, from design to implementation. According to the United Nations, the use of AI must comply with the principle of transparency by requiring that decisions made by AI are understandable and verifiable by human beings. In addition, AI systems must always be accompanied by human supervision that must continue in all automated decision-making processes to ensure that AI access to people's fundamental rights must always occur under human supervision and intervention. Finally, particular emphasis is also placed on the principles of transparency and non-discrimination[35].

In 2023, the Government of Serbia adopted the Conclusion on Adoption of Ethical Guidelines for Development, Application and Use of Reliable and Responsible Artificial Intelligence (hereinafter: Ethical

[33] European Commission, "Ethics Guidelines for Trustworthy AI prepared by the High-Level Expert Group on Artificial Intelligence within the European Commission" (2019), at https://www.europarl.europa.eu/cmsdata/196377/AI%20HLEG_Ethics%20Guidelines%20for%20Trustworthy%20AI.pdf, accessed 22 September 2024.

[34] United Nations System Chief Executives Board for Coordination, "Principles for the Ethical Use of Artificial Intelligence in the United Nations System" (20 September 2022), at https://unsceb.org/principles-ethical-use-artificial-intelligence-united-nations-system, accessed 22 September 2024.

[35] Ibid.

Guidelines)[36]. While these Ethical Guidelines are mainly addressed to public administration, i.e. government bodies and other holders of public authorisations, they are also recommendable for any other legal or natural person that develops and uses AI to adhere to them. The Ethical Guidelines provide the principles that should be followed when AI is used and prescribe a set of questions that should be adjusted for a specific sector, based on which it can be monitored whether certain principles are at risk of a breach. The conditions determined through the stated categories consist of parameters that are divided into technical and non-technical methods. On the one hand, the technical methods aim to guide the development and use of AI systems in order to ensure their reliability and the minimisation of potential damages. These methods are provided in the form of recommendations. On the other hand, the non-technical methods refer to organisational and other non-technical elements in the process of the development and use of AI systems. The non-technical method is provided in the form of a questionnaire, the purpose of which is to assess whether the specific AI system complies with the prescribed ethical standards. The questionnaire contains minimum standards and may be adjusted for a specific sector or even project. Monitoring performance through the questionnaire serves a dual purpose. On one hand, the questionnaire should provide a clear guideline for any specific project whenever a legal/ethical issue arises within the system and should suggest which appropriate measures can be taken. On the other hand, collecting information from various questionnaires and analysing the available data can be a very valuable asset for future projects, as such data can show whether there are some common issues and ultimately help find their cause, which could be mitigated in the future. However, collecting enough data for a proper analysis would require populating the questionnaire with a great number of data from a great number of projects.

While the questionnaire can serve as a sort of checklist for compliance regarding specific AI matters, it should be borne in mind that there may be other, legally mandatory requirements that need to be fulfilled. First and foremost, all processes must comply with the data protection regulations in force, as a mandatory piece of legislation

[36] Government of Serbia, cit. at 5.

that regulates personal data, which, in most cases, are extensively used in AI projects. It should be ensured that a proper legal basis for processing personal data is in place prior to processing. Depending on the specific case, it may also be necessary to perform an impact assessment; if the latter shows that the intended processing activities would pose a high risk to data protection, it may be necessary to request an opinion from the Commissioner for Information of Public Importance and Personal Data Protection before starting. Further, the intellectual property aspect should also be taken into account, as issues relating to copyright and patents could arise. Therefore, the AI systems must be developed in accordance with the general legislative framework, as far as possible, while the Ethical Guidelines must also be followed, as they are one of the few legal acts to focus on AI systems, regardless of the fact that they are not a mandatory regulation.

With the AI Act, the European Union has introduced a regulatory framework on Artificial Intelligence. Serbia is currently undertaking accession negotiations to join the European Union, that require a complete alignment with the EU *acquis*[37], which will be also applicable to all EU regulatory developments, including the AI *acquis*. Therefore, it is expected that future legislation on AI will aim to ensure the closest possible alignment with EU standards.

3. Use of AI by the Public Administration

The use of AI in public administration requires proper grounds for the use of digital technologies in general. In order to work more efficiently on the development of public administration services using digital technologies, in 2017 the Government set up the Office for information technologies and electronic administration ('Office for IT'). The purpose of setting up this special organisation was to have a body focusing on development and implementation of standards and measures in the introduction of information and communication

[37] M. Milenković, *EU Enlargement, Conditionality Policy and Prospects for the Integration of the Western Balkans*, in L. Montanari (ed.), *L'allargamento dell'Unione europea e le transizioni costituzionali nei Balcani occidentali* (2022) 61–75; M. Milenković, *The Western Balkans and European Union enlargement – exploring possibilities of differentiated integration*, in D. Fromage (ed.), *(Re-)defining Membership: Differentiation in and outside the European Union* (2024) 273–290.

technologies in state administration and Government services, the establishment and management of information systems in which state administration bodies and holders of public authority maintain data in registers of importance for the provision of electronic administration services and registers of importance for scientific research, connecting data from registers under the jurisdiction of other state authorities and similar activities[38]. After the Law on Electronic Administration[39] was adopted in 2018, the legal basis for introduction of electronic public administration services was set, and such services could be introduced in practice. This led to the development of an improved portal for the provision of electronic public administration services – eAdministration Portal[40] (in Serbian: "*portal eUprava*") that was made available to the general public in 2020, coinciding with the COVID crisis and increased use of digital tools in all spheres of life. The eAdministration Portal offers various public administration services, from scheduling appointments with different authorities, ordering certain documents, and tax calculations in the self-taxation system, to obtaining certain confirmations and certificates issued by the public authorities in electronic form. Further, the availability of specific services depends on the type of registration and sign-in method adopted by the user.

The eAdministration Portal also strives to be a one-stop shop for its users, connecting the state authorities and the registers and records they keep, enabling users to efficiently communicate and cooperate with the public administration. One of the indicators of the development of the eAdministration Portal is the increase in the sets of data that have been included in the Open Data Portal (already described in section 2) as a result of connecting the data held by the state authorities. Thereby, the basis for use of AI is being prepared, in the sense of ensuring that the appropriate amount of data is available for the AI systems to be developed in accordance with ethical standards.

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[38] See more at https://www.ite.gov.rs/tekst/149/kancelarija-za-it-i-eupravu.php, accessed 12 October 2024.

[39] Law on Electronic Administration (*Zakon o elektronskoj upravi*), Official Gazette of RS, no. 27/2018.

[40] See more at https://euprava.gov.rs/eusluge?service=lifeSituation&lifeAreaId=57, last accessed 22 September 2024.

Despite the efforts made to increase the use of AI in the public administration, in practice its use is still limited. The notable examples of use of the AI in public administration is the feature "Read to me" (in Serbian: "*Čitaj mi*") available on the website of the government, i.e. the eAdministration Portal that uses automated speech recognition technology. This feature was designed to help those with disabilities to have easier access to information on how they can complete an administrative procedure they require. The main example of the current limited use of AI by the public administration is the introduction in 2020 by the City of Belgrade of the so-called Hawk Eye[41] (in Serbian: "*Oko sokolovo*") system for traffic and parking control. The process is performed by specially designed vehicles. The vehicles are equipped with cameras that record the licence plates of cars parked on both sides of the road, based on which the system determines whether there are any irregularities and if so, the appropriate ticket is issued to the car owner. The system uses the data stored by the state-owned enterprise Parking Service to verify whether the parking fee has been paid. The data is then sent to the municipal police, that formally issues the ticket, although the process is entirely automated. In other words, once the system processes the collected data, in case it determines that there is an offence (i.e., a failure to pay a parking fee), the ticket is automatically issued. Moreover, the Hawk Eye system also records data on vehicles that are parked on sidewalks, green areas and other prohibited surfaces, or in a manner that impedes the usual traffic flow. The records produced by Hawk Eye, and the data from the Parking Service, are also sent to the city police, where human police officers review the case at hand; if they confirm that a vehicle was illegally parked, then a ticket is issued. From a practical point of view, it is unclear to what extent the records and data are actually reviewed by the police themselves; it may be argued that this process has somehow become automated as well. Citizens are entitled to lodge a complaint with police. In theory, they may review the case again and withdraw the ticket. Given that information on submitted complaints is not publicly disclosed, there are no records on whether this is actually done in practice. The great benefit of this system is that it is completely objective since it records all cars; the risk of corruption is

[41] See more at https://okosokolovo.com/, last accessed 22 September 2024.

thereby mitigated. Further, Hawk Eye is more efficient than human parking controllers, as it can cover more space and perform a larger number of controls in the same time. Yet, the issue that arises in practice is that the Hawk Eye cannot distinguish the numerous situations that happen in everyday traffic and that make exceptions for issuing parking tickets, such as whether the car only stopped for persons to disembark the vehicle or it is improperly parked. As with all AI systems, these concerns regarding its application need to be properly addressed.

Further, this example of application of AI proves that before using the AI-based system in practice, it is of the outmost importance to establish a proper legal basis, in order to mitigate as many legal risks as possible. Apart from being virtually the only documented example of the use of AI in administrative decision-making, the legal basis for this system – specifically the Decision on Municipal Police[42] and the Decision on Municipal Order[43] – is questionable and subject to legal challenges. The issue has been raised whether these decisions, as legal acts adopted at city (municipal) level, comply with the relevant laws in force. The Law on Municipal Activities of 2011[44] defines the activities considered municipal and are supervised by communal militia. Further, the Law on Safety of Traffic on Roads of 2009[45] regulates the rules on traffic and establishes that, as a rule, the supervision of traffic violations is to be carried out by the Ministry of Internal Affairs, i.e. Traffic Police Administration. Therefore, as parking matters and irregularities in that regard fall under the

[42] Decision on Municipal Police (*Odluka o komunalnoj miliciji*), Official Gazette of the City of Belgrade, no. 101/2019 and 83/2022.

[43] Decision on Municipal Order (*Odluka o komunalnom redu*), Official Gazette of the City of Belgrade, no. 10/2011, 60/2012, 51/2014, 92/2014, 2/2015, 11/2015, 61/2015, 75/2016, 19/2017, 50/2018, 92/2018, 118/2018, 26/2019, 52/2019, 60/2019, 17/2020, 89/2020, 106/2020, 138/2020, 152/2020, 40/2021, 94/2021, 101/2021, 111/2021, 120/2021, 19/2022, 96/2022, 109/2022, 41/2023, 65/2023 and 12/2024.

[44] Law on Communal Activities (*Zakon o komunalnim delatnostima*), Official Gazette of RS, no. 88/2011, 104/2016 and 95/2018.

[45] Law on Road Traffic Safety (*Zakon o bezbednosti saobraćaja na putevima*), Official Gazette of RS, no. 41/2009, 53/2010, 101/2011, 32/2013 – decision of constitutional court, 55/2014, 96/2015 – other law, 9/2016 – Decision of the Constitutional Court, 24/2018, 41/2018, 41/2018 – other law, 87/2018, 23/2019, 128/2020 – other law and 76/2023.

jurisdiction of the rules of the Law on Safety of Traffic on Roads, one would assume that supervision of such matters would be performed by the traffic police. Given that neither the Law on Municipal Activities nor the Law on Road Traffic Safety provides an exception regarding parking matters, i.e. neither establishes the jurisdiction of the municipal police for overseeing parking violations, it is questionable how legal acts at city level have conferred such jurisdiction on the municipal police. In accordance with the Constitution[46], all laws must comply with it, and all legal acts issued on town or municipal level must be compatible with the Constitution and all laws in force, in order to ensure a coherent legal system. Therefore, only laws can establish an exception to a rule prescribed by another law. Due to the uncertainty that was introduced by the Decision on Municipal Order and the Decision on Municipal Police, a request for a procedure for assessing the constitutionality and legality of the respective provisions was submitted to the Constitutional Court; the case is still pending.

There is an additional example of the intended use of AI by the public administration, as the Tax Administration is currently implementing, together with the Faculty of Natural Sciences of the University of Novi Sad, the research project "Detecting the risk of evading personal income tax based on appropriate methods using artificial intelligence"[47]. Although no details regarding this project and the expected start date for the use of AI solutions are publicly available, the intended use of the project clearly concerns the assessment of the evasion of personal income tax, with possible far-reaching consequences on tax-payers' human rights. In the Serbian tax system, appeals against tax decisions, as a rule, do not stay the execution of the decision, entailing often huge financial burdens on the party against whom the tax decision was made. It is yet to be seen what kind– and what level – of automation will be implemented in these cases, but this matter requires the outmost caution when implementing the new technologies and urgently calls for a legislative framework to be put in place.

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[46] Constitution (*Ustav Republike Srbije*), Official Gazette of RS, no. 98/2006 and 115/2021.

[47] See https://www.ai.gov.rs/tekst/en/101/application-of-ai-in-the-public-sector.php, last accessed 22 September 2024.

Although the examples just described present only the first steps, developing such projects and putting the designed systems into use marked a significant move. This is recognised in draft Strategy 2024-2030, which emphasises the importance of supporting the actual use of the AI systems and technologies, as well as support in the project development and testing phase. In other words, Strategy 2020-2025 set the foundation for funding AI projects and encouraged the development of technologies, while draft Strategy 2024-2030 goes a step further, acknowledging success in the project development phase and now advocating for accessibility and investing in the applicability of the developed systems. There are a number of considerations both in the legal scholarship and practice that the future legislative framework in Serbia must address. In particular, one of the main questions posed is whether AI systems function on a neutral basis, given that a wealth of literature has noted that decisions made by AI are hardly ever objective[48]. Indeed, according to Floridi, the advent of AI requires a reassessment of the so-called 'infosphere', i.e., the information space in which we act and interact since an AI's autonomous decision-making power risks compromising individual freedoms and autonomies[49]. Similar concerns were also raised by Huq[50], who, addressing the issue of predictive justice, highlights the dangers of relying on algorithmic models to make complex legal decisions, and underlines the problematic relationship between AI and the Rule of Law in the light of the principle of transparency and accessibility. This is because it is becoming increasingly difficult to 'look inside an algorithm', both for reasons concerning companies' copyright and the degree of development of AI, which has reached such complexity that it resembles a neural network capable of autonomously producing its own 'thought'. As outlined above, Serbian legal scholarship is yet to address the challenges of introduction of AI technologies in public administration. In one of the

[48] L. Floridi et alii, *AI4People – An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations Minds and Machines*, 28(4) Minds and Machine 689–707 (2018).

[49] L. Floridi, *The Fourth Revolution: How the Infosphere is Reshaping Human Reality* (2016).

[50] A. Huq, *Artificial Intelligence and the Rule of Law*, in M. Sevel (ed.), *Routledge Handbook on the Rule of Law* (2025, forthcoming).

rare studies of its use from the point of view of the legislative framework in force – such as the Law on general administrative procedure and the Law on e-government – Jovanović and Andonović conclude that there are some cases where automated decision-making might be possible (predominantly when aiding humans), but they also pointed out that "[c]urrently, the legal framework of the general administrative procedure in the Republic of Serbia does not allow the use of computer programs and information systems to make administrative decisions. Only an official is authorised to analyse the facts of a specific case and make a decision"[51]. Bearing all this in mind, it can be concluded that wider use of AI technologies by the public authorities in Serbia will have to wait for both the establishment of the infrastructural/technical architecture for its implementation and the alignment of several legislative texts before it can be fully implemented.

4. Concluding Remarks

Serbia's efforts to integrate artificial intelligence into public administration reflect a broader global trend towards using AI to improve efficiency and governance. However, as in other jurisdictions, these efforts also raise well-known challenges and potential conflicts with human rights considerations. The country has made some progress with the investment in AI research and development, the creation of IT infrastructure to support the future introduction of AI in the public sector, and the establishment of a strategic framework – namely Strategy 2020-2025 and the Ethical Guidelines for the use of AI – while already preparing the new strategic framework to keep pace with technological advancements. However, most legal challenges remain unanswered, particularly with regard to ensuring that AI is implemented in an accountable and transparent manner. The lack of binding national AI-specific legislation highlights the importance of aligning the Serbian legal and international legal frameworks, such as the EU AI Act and the United Nations guidelines, to safeguard human rights and ensure accountability. In addition, the judiciary in Serbia is yet to face the challenges of the use of AI, especially when it comes to

[51] Z. Jovanović & S.N. Andonović, cit. at 13, 67.

administrative decision-making and the future emergence of the algorithmic state. As Serbia moves towards greater adoption of AI, particularly in sectors such as healthcare, education, and public administration, a focus on building robust ethical and regulatory frameworks will be crucial. It is expected that, by mid-2025, a new strategic and legislative framework should be in place and that more examples of the use of AI in public administration will emerge, making it a topical issue to follow for both legal practitioners and scholars.

THE USE OF ALGORITHMIC AUTOMATION AND ARTIFICIAL INTELLIGENCE BY THE PUBLIC ADMINISTRATION IN SLOVENIA

Damjan Možina and Jernej Renko***

Abstract

Artificial Intelligence (AI) and algorithmic automation are rapidly reshaping public administration globally. In Slovenia, public authorities are gradually adopting AI-driven technologies, particularly in sectors such as tax management, agriculture, and public procurement. However, Slovenia has not yet established a comprehensive legal framework for algorithmic governance, relying instead on existing laws that govern public administration and data protection. This paper examines the legal foundations for the use of AI and algorithmic automation in Slovenian public administration. It also attempts to identify gaps, compares Slovenia's regulatory approach with European Union (EU) Law, and discusses some key challenges related to privacy, transparency, and human oversight in AI deployment.

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1. The Legal Framework for AI and Algorithmic Automation in Public Administration

In the Republic of Slovenia, there is currently no specific, overarching legal framework for the use of algorithmic automation and AI by public administration. There are also no legal bans specifically targeting the reliance on algorithmic automation or artificial intelligence (AI) in public administration. However, pre-existing legislation allows the use of some aspects of AI and automated processes. The legal framework consists of various data protection, transparency, administrative procedures, and human rights laws that indirectly regulate the deployment of AI in public administration.

1.1. Existing Legal Foundations

(a) General Administrative Procedure Act

The Slovenian General Administrative Procedure Act ('ZUP')[1] is based on the principles of legality, transparency, and accountability of public administration. It seems to follow that any use of AI or algorithmic systems in decision-making processes – insofar as it is considered admissible – should be transparent and (human) control should be possible[2]. Furthermore, an administrative decision should

[1] Zakon o splošnem upravnem postopku (ZUP), Official Gazette of the Republic of Slovenia, No. 80/99, last amendment 3/22).
[2] See below, section 3.

also contain a justification, at least the decisions against which the parties may appeal [3]. Justification (the stating of reasons) for administrative decisions seems to be a problematic aspect of AI-generated decisions, as the results of processes by machine learning models may sometimes be very difficult to explain *ex post* (the so-called 'black box' phenomenon)[4].

(b) Privacy and Data Protection

The General Data Protection Regulation ('GDPR')[5] of the EU is applicable to the processing of personal data, including processing by AI systems. Any use of personal data in algorithmic systems by public bodies should follow the principles of data protection, including legality, fairness, transparency, and purpose limitation.

The Slovenian Data Protection Act ("ZVOP-2")[6], adopted in 2022, helps ensure the implementation of the GDPR in a systematic manner and is largely based on the GDPR. It uses terms from both the GDPR and the Data Protection Directive[7]. In some areas, it regulates in more detail the operation of the GDPR. The ZVOP-2 outlines the specific regulations for processing personal data in various contexts, including scientific, historical, statistical, and archival research, biometric and genetic data, freedom of expression and public information, and the protection of personal data of deceased individuals.

As required under Art. 5(1) (c) GDPR, any AI systems may only process the minimum amount of data necessary for a specified purpose. Furthermore, data collected by a public body for a specific

[3] See e.g. P. Kovač, *Funkcije in (ne)nujnost obrazložitve upravne odločbe* 29–30 Pravna praksa 6 (2024).
[4] See e.g. J. Fornazarič, *Obrazložitev upravne odločbe v okolju UI*, Pravna praksa 35 (2024).
[5] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).
[6] Zakon o varstvu osebnih podatkov (ZVOP-2), Official Gazette of the Republic of Slovenia, no. 163/22.
[7] Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (Data Protection Directive).

purpose must not be repurposed without legal justification, Art. 5(1) (b) GDPR. Art. 5(1) (d) GDPR requires that data be accurate and updated, ensuring the quality of datasets used in automated systems. Moreover, public bodies must provide a lawful basis for data processing in accordance with Art. 6 GDPR. In the public sector, personal data of an individual who has consented to its processing for one or more specific purposes may be processed, provided that such processing is permitted by law. If the processing by the public body does not involve the execution of statutory powers, duties, or authoritative obligations of the public body, the processing of individual's data must be based on consent as well (Art. 6(3) ZVOP-2). In the case of automated decision-making and profiling, Art. 22 GDPR must be observed, i.e. individuals should not be subject to decisions based solely on automated processing unless there is explicit consent or it is necessary for contractual reasons. Moreover, the individuals have the right to access their personal data and request corrections, as stipulated in Arts. 15 and 16 GDPR. Regarding transparency obligations, the public bodies using AI must provide individuals with clear and understandable information about how their data is being processed, including the purposes and logic of automated decision-making (Arts. 12–14 GDPR).

In accordance with Slovenian law, the impact assessment for personal data processing is mandatory when there is a likelihood that the type of processing, particularly with the use of new technologies, could pose a high risk to the rights and freedoms of individuals. GDPR and ZVOP-2 specify instances where an impact assessment must be conducted. These include situations involving systematic and extensive evaluation of personal aspects of individuals based on automated processing, including profiling, which serves as the basis for decisions that have legal effects or significantly impact individuals in a similar way. It is also required in cases of large-scale processing of special categories of data, or data related to criminal convictions, as well as extensive systematic monitoring of publicly accessible areas. Additionally, ZVOP-2 imposes further obligations regarding impact assessments in specific areas. These include maintaining processing logs and conducting impact assessments as per Arts. 22 and 24 ZVOP-2, the processing of personal data for research purposes under Art. 69 ZVOP-2, and conducting traffic surveillance in accordance with Art. 80

of ZVOP-2. An impact assessment is also required when linking personal data collections as stated in Art. 87 ZVOP-2. In the context of personal data processing for national security, the responsible state security authority must prepare an impact assessment, which must be accessible to supervisory bodies, such as the Slovenian Human Rights Ombudsman and relevant working bodies. Furthermore, for video surveillance of public roads, an impact assessment must be conducted before determining the locations to be monitored, and the findings must be submitted for prior review by the supervisory authority, Art. 80(9) ZVOP-2. When linking personal data collections, an impact assessment and prior consultation with the supervisory authority (Slovenian Information Commissioner) must be conducted, Art. 87(2) ZVOP-2.

(c) Information Security Act

In their reliance on algorithmic automation and Al, the public administration must also observe the provisions of the Slovenian Information Security Act[8]. This act transposes the EU NIS 1 Directive[9] (and thereby stipulates cybersecurity requirements, mandating public institutions to implement security measures necessary to protect data and systems against cybersecurity threats). The public administration must implement appropriate and proportionate technical and organisational measures to manage risks posed to their network and information systems. Inter alia, the public administration must conduct a risk analysis, assessment, and evaluation and, based on this, prepare and implement the necessary measures to manage risks concerning the security of information systems and network components they manage (Art. 16 ZInfV) Public administration bodies must adopt necessary measures to prevent and mitigate the impact of incidents that affect the security of their information systems and networks to ensure the continuous operation of government services. To ensure information security and a high level of security for their

[8] Zakon o informacijski varnosti (ZInfV) (Official Gazette of the Republic of Slovenia, No. 30/18, 95/21, 130/22, 18/23, 49/23).

[9] Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union (NIS 1 Directive).

networks and information systems, public administration bodies must establish and maintain a documented system for information security management and business continuity management (Art. 17 ZInfV). Moreover, in accordance with the Art. 18 ZInfV, public administration bodies must notify the Computer Security Incident Response Team (CSIRT) for public administration bodies without unnecessary delay of any incidents that significantly impact the continuous provision of government services, whereby those public administration bodies with their own security operations centre must notify the competent national authority (Art. 18 ZInfV). Pursuant to the Art. 27(1) ZInfV, the competent national authority is the Slovenian Information Security Authority (*Urad Vlade Republike Slovenije za informacijsko varnost*). On May 15, 2024, the Slovenian Information Security Authority prepared a second draft of the proposal for the amendment of the existing ZInfV, which is set to transpose the new NIS 2 Directive[10] into Slovenian national law.

(d) State Administration Act

Article 74.a of the Slovenian State Administration Act (ZDU-1)[11] regulates the management of information technology in the state administration with regard to its electronic operation. It outlines the framework, responsibilities, and principles for managing and developing IT infrastructure, systems, and services across various government bodies. It defines the roles of key institutions in ensuring the effective, secure, and transparent use of technology to support administrative processes and public service delivery.

Pursuant to Art 74.a ZDU-1, the Ministry of Digital Transformation is responsible for managing and developing IT infrastructure and solutions in the state administration, ensuring compliance with the central system and handling budget resources. This does not apply to systems related to defence, disaster

[10] Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union, amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and repealing Directive (EU) 2016/1148 (NIS 2 Directive).

[11] Zakon o državni upravi *(*ZDU-1) (Official Gazette of the Republic of Slovenia, No. 52/02, last amendment 95/23).

management, police, internal affairs, intelligence, foreign affairs, and financial crime prevention.

1.2. The National Programme to Promote AI

According to the Slovenian Ministry of Public Administration, Slovenia is currently not preparing standalone legislation on artificial intelligence [12]. However, in 2021 the government approved the National Programme to Promote the Development and Use of Artificial Intelligence in the Republic of Slovenia by 2025 (NpAI)[13]. The NpAI acknowledges that an environment conducive to AI development, deployment, and use requires legislation ensuring AI solutions align with societal norms. It emphasizes the dedication of to fostering transparent, ethical AI that citizens can trust, collaborating with European partners to establish a legal and ethical framework grounded in EU values and human rights, emphasizing privacy, dignity, fair trial, consumer protection, and non-discrimination. Special attention is needed for privacy, data protection, and anti-discrimination, with AI development guided by ethical criteria like human control, technical safety, transparency, fairness, and accountability. The NpAI expresses Slovenia's commitment to ensuring that regulation of AI enforces existing norms, ensures transparency in AI operations, and addresses liability in cases of discriminatory AI outcomes. According to the NpAI, the use of AI must respect democratic principles and contribute positively to society and the environment, promoting sustainability[14].

[12] R. Biljak Gerjevič, *Umetna inteligenca v Sloveniji: "Želimo biti med vodilnimi"* (N1, 30 June 2021), at https://n1info.si/novice/slovenija/umetna-inteligenca-v-sloveniji-zelimo-biti-med-vodilnimi, accessed 30 September 2024.

[13] See the National programme to promote the development and use of AI in the Republic of Slovenia by 2025 (27 May 2021), at https://nio.gov.si/api/files/c5f4072c-7662-4d05-a7d2-a48eaf8b2df5/file, accessed 30 September 2024.

[14] National programme, cit. at 13, 51.

2. Applications of Algorithmic Automation and AI in Slovenia's Public Sector

The initial attempts to integrate AI into public administration date back to 2007, when the Slovenian Tax Administration (DURS) launched a virtual tax assistant named "Vida" on their website[15]. A few years later, a similar project called "Asistent" was introduced, which helps visitors to the municipality or association website by facilitating information search and the use of services offered on the site[16]. The primary purpose of both chatbots was to assist users by answering their questions. In 2018, another chatbot named "Ljubo" became available, offering information via messaging, such as bus schedules and road closures to residents, under the jurisdiction of the Municipality of Ljubljana[17].

AI tools are now successfully being used in the Slovenian public sector for tasks such as analysing and monitoring public procurement, anonymizing documents, and tracking analytics related to combating tax evasion[18]. The Ministry of Public Administration is also developing a semantic document analyser powered by AI systems. This technology is expected to facilitate document search and the grouping of documents with similar content[19]. AI technologies are also employed in the healthcare sector, where machine learning algorithms assist in disease recognition and diagnosis[20].

2.1. Tax Administration

The tax management sector has also seen substantial algorithmisation, particularly by the use of predictive analytics in the Financial Administration (FURS). Machine learning models have been developed to assess the risk of value added tax (VAT) and corporate

[15] K. Fidermuc, *Davčna asistentka Vida se ni preselila v finančno upravo* (13 March 2015), at https://old.delo.si/gospodarstvo/finance/davcno-asistentko-vido-so-upokojili.html, accessed 30 September 2024.
[16] See the website of the project "Asistent" http://www.projekt-asistent.si/info/index, accessed 30 September 2024.
[17] See the website of the project "Ljubo" https://engagency.si/nasi-projekti/mol/, accessed 30 September 2024.
[18] National programme, cit. at 13, 37.
[19] National programme, cit. at 13, 37.
[20] National programme, cit. at 13, 34–35.

income tax (CIT) returns. These models analyse data from tax returns and other taxpayer information to calculate the risk of non-compliance or fraud even before returns are processed. This proactive approach allows for more precise targeting in tax audits and helps to manage fiscal risks more effectively. The adoption of predictive analytics tools, such as "KNIME" and "QlikSense", further improves the system's capability to systematically address tax and customs risks, enhancing both accuracy and efficiency in tax oversight[21].

An early attempt to introduce algorithmic decision-making in public administration is based on the Arts. 210 and 214 ZUP, seemingly enabling administrative decisions to be adopted automatically, signed with a facsimile (picture) of signature of the competent authority. The possibility was introduced for decision-making in mass and simple matters, such as the issuing of "informative calculations of income tax" to the taxpayers (see also Tax Procedure Act ('ZDavP-2')[22], Art. 84a). If the taxpayers do not agree with the informative calculation, they may file an objection.

However, it seems that the legislator simply did not really face the fact that these decisions are issued automatically, based on an algorithm, and that they are not being checked by the competent authority. In this sense, the picture of the signature is misleading as it creates the impression that the decision was taken (or was at least checked) by the person signed. In fact, the legislation does not foresee the possibility that anyone else (let alone an algorithm) aside from the competent authority can adopt a valid decision in the course of administrative procedure. Interestingly, no case-law is published where a party would challenge a decision on these grounds. It would appear that by analogous application of the case law of the Slovenian Administrative Court with regard to similar matters such a challenge might currently be successful[23].

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[21] See the Annual Report for the year 2023 of the Slovenian Financial Administration, at https://www.gov.si/assets/organi-v-sestavi/FURS/Strateski-dokumenti/2024/Letno-porocilo-Financne-uprave-za-leto-2023.pdf, accessed 30 September 2024.

[22] Zakon o davčnem postopku ("ZDavP-2") (Official Gazette of the Republic of Slovenia, No. 117/06, last amendment 131/23.

[23] See e.g. UPRS I U 502/2021-18, Administrative Court of the Republic of Slovenia, 3 January 2022, where the court stated that the absence of hand signature or electronic

On the other hand, the principles of independent (autonomous) decision-making and free assessment of evidence open up the possibility for the competent authority to use an AI system when establishing facts upon which a decision is based. The law does not seem to prohibit it. A decision is considered a decision of an official person and must be based on procedural and material law. This primarily means that the decision must state reasons, which is particularly important from the point of view of remedies against the decision.

2.2. Agriculture

A further public administration sector affected by AI is agriculture. The Agency for Agricultural Markets and Rural Development (Agencija Republike Slovenije za kmetijske trge in razvoj podeželja (ARSKTRP) as a body within the Ministry of Agriculture, Forestry, and Food, utilises an AI system that analyses agricultural land using satellite imagery. This technology enables the agency to monitor land use, assess compliance with agricultural policies, and optimise resource allocation, significantly reducing the need for manual inspections. The integration of AI in this sector not only enhances operational efficiency but also supports sustainable agricultural practices and better policy implementation[24].

signature of the competent authority represents grounds for invalidity of the decision and sent the case back to the first instance, whereby the underlying reason for such a decision was certain amount of ambiguity as to whether the decision was issued by one or the other authority as both were mentioned.

[24] See the statement of the Slovenian Minister of Public Administration on the 9th Slovenian Public Sector Academy (10 April 2024), at https://www.gov.si/novice/2024-04-10-minister-mag-props-umetna-inteligenca-je-priloznost-za-javni-sektor, accessed 30 September 2024; The Annual Report for the year 2023 of the Agency for Agricultural Markets and Rural Development (2023), at https://www.gov.si/assets/organi-v-sestavi/ARSKTRP/Aktualno/Letno-porocilo-2023.pdf, accessed 30 September 2024.

3. Human Oversight and Decision-Making. The Role of Human Control

The concern with the digitalisation of administrative procedures highlights the potential risks of delegating executive authority to automated decision-making systems. Even if we accept the possibility of automated or AI based decision-making, human control of the decisions is necessary as the AI – at least from the perspective of today – does not actually make decisions based on legal rules, but on patterns recognised from the legal cases on which the algorithm was trained[25]. However, due to the possibility of real-time machine learning, these patterns may change and gradually deviate from the legal regulation. Therefore, it seems essential that the results are subject to independent human judgment – at least periodically[26].

According to this principle of autonomous decision-making (Art. 12(2) ZUP), an administrative body must independently conduct proceedings and make decisions based on laws and regulations. If automated decision-making systems effectively take over decision-making without adequate supervision, it could breach this autonomy, as the automated decision-making systems would, in effect, make decisions on behalf of the authority[27].

4. Daily Use of (generative) AI among Public Administration Employees

A short survey on the use of AI in Slovenian public administration, conducted in 2023 by a student of University of Ljubljana among various Slovenian ministries, revealed that most ministries do not employ AI methods in their daily operations. Ministries for agriculture, environment, justice, health, and culture

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[25] Y. Hermstrüwer, *Artificial Intelligence and Administrative Decisions Under Uncertainty*, in T. Wischmeyer & T. Rademacher (eds.), *Regulating Artificial Intelligence* (2020) 201.

[26] B. Cartwright, *Regulating the Robot: A Toolkit for Public Sector Automated Decision-making*, Ox. U. Undergrad. L. J. 23, 28 (2021).

[27] J. Wolswinkel, *Artificial Intelligence and Administrative Law* (2022) 10, at https://coe.int/documents/22298481/0/CDCJ%282022%2931E+-+FINAL+6.pdf/4cb20e4b-3da9-d4d4-2da0-65c11cd16116?t=1670943260563, accessed 30 September 2024.

report not using AI, while some ministries recognise the potential of new language models, such as ChatGPT, albeit with restrictions related to data security and confidentiality. The Ministry of the Interior and the Ministry of Justice see possibilities for AI use in drafting legislative proposals and generating less complex administrative texts but emphasize that AI must not replace human judgment. All decisions made with the assistance of these models must be carefully reviewed by experts. Ministries also highlighted security challenges related to the use of cloud services and the importance of supervision over systems, where AI plays a supportive role in automation and big data analysis[28].

The safe use of AI is crucial in ensuring that its benefits are maximised while minimising potential risks. AI's integration into public administration can be problematic, particularly in areas such as data protection of individuals, state secrets, and cybersecurity, where unauthorised access or misuse could have detrimental consequences. To address these challenges, it is essential to educate public administration employees on the responsible use of AI, ensuring that they are equipped to handle sensitive information and maintain robust security measures.

To that end, the Ministry of Public Administration established the "Administrative Academy" (*Upravna akademija*), focusing on improving the digital literacy of public employees. In 2019, it thoroughly revamped the digital literacy training programme for public employees. From 2019 to 2022, the Administrative Academy provided digital competency training only for state administration employees, and the training covered only basic digital skills. In 2023, the Administrative Academy started implementing the programme "Enhancing Digital Knowledge and Skills of Public Employees" as part of the EU Recovery and Resilience Plan (RRP). The programme is set to improve the basic and user-level digital skills and awareness of public employees, both in state and local administration. The training programme development used the DigComp2.2 framework and the OECD framework for digital talent and skills in the public sector. The

[28] R. Prek, *Priložnosti in izzivi umetne inteligence v slovenski javni upravi: diplomsko delo* (2023) 35-44, at https://repozitorij.uni-lj.si/IzpisGradiva.php?id=151006, accessed 30 September 2024.

programme *inter alia* included courses on informational security and getting acquainted with newly available technologies such as AI, the Internet of Things, and augmented reality[29].

5. Interoperability Framework for Digital Data Management

On 23 October 2010, Slovenia launched the portal 'NIO'- the national interoperability framework in Slovenia. The project allows different stakeholders to publish standards and guidelines on interoperability that are important at the national level, and that encourages the publishing of open data and applications. The NIO portal provides a centralised infrastructure for managing digital data exchange between administrative bodies. It guarantees interoperability across multiple infrastructures by ensuring the use of open data standards and services. Procedures for data exchange between different bodies are streamlined through common rules, promoting transparency and efficiency. The infrastructure supports the standardised integration of various services and systems, facilitating smooth data sharing across public administrations[30].

Furthermore, the Ministry of Digital Transformation also develops and manages a business intelligence (BI) system with a data warehouse called *Skrinja* (English: chest, box). It is used by various public authorities where users can interactively view and process data in real time with advanced visualisations, using even mobile devices. This accelerates data processing, analytics, visualisation preparation, and routine tasks, enabling employees to gain new insights from the data and interpret them accordingly. Skrinja is designed as a horizontal solution for users within the state administration. Skrinja provides real-time data on public sector salaries, covering over 180,000 public employees, 2,000 budget users, and 750 different types of payments. It also includes public procurement data, representing more

[29] Report on the Implementation of the Programme "Enhancing Digital Knowledge and Skills of Public Employees" (January 2024), at https://ua.gov.si/media/wxhpulvm/porocilo_noo_2023.pdf, accessed 30 September 2024.
[30] See the Portal "NIO" website, at https://nio.gov.si/en/about/purpose, accessed 30 September 2024.

than 11% of GDP, as well as data from 'Krpan' (the state's digital document system), which displays the number of administrative procedures carried out by state administrative units. Additionally, 12 new data sources from various public authorities are being prepared, reflecting the significant interest in analytical support for decision-making among public bodies. Plans also include making awarded public procurement contracts available to the general public online. Future developments will focus on predictive analytics and algorithmic processing using artificial intelligence[31].

6. The State of Scholarly Debate in Slovenia

Slovenia places strong emphasis on the development and application of AI, notably through the adoption of its NpAI. The country has a rich tradition in AI research, with institutions like the Jožef Stefan Institute (JSI)[32]. Slovenia also hosts the International Research Centre on Artificial Intelligence (IRCAI) under the auspices of UNESCO, which focuses on ethical AI solutions addressing global challenges such as sustainability, health, and education[33]. Additionally, the Slovenian Artificial Intelligence Society (SLAIS) promotes AI research and technology transfer, fostering collaborations between academia and industry, and contributing significantly to European AI development[34].

In terms of debate on legal aspects of algorithmic decision-making and AI, a comprehensive work exploring digital transformation within public administration entitled "The Digital Transformation of Public Administration in Theory and Practice" was

[31] See the website of the Product "Skrinja" at https://nio.gov.si/products/skrinja%2B20%2Bsistem%2Bposlovne%2Banalitike, accessed 30 September 2024.
[32] See the Jožef Stefan Institute (JSI) website at https://www.ijs.si/ijsw, accessed 30 September 2024.
[33] See the International Research Centre on Artificial Intelligence website under the auspices of UNESCO (IRCAI) at https://ircai.org, accessed 30 September 2024.
[34] See the Slovenian Artificial Intelligence Society (SLAIS) website at https://slais.ijs.si, accessed 30 September 2024.

recently published[35]. The volume also contains a contribution on the development possibilities and limitations of emotional AI in social processes[36].

Further scholarly debate on the legal aspects on the above issues, for the most part, transcends national borders as it deals with several legal aspects of artificial intelligence. Research on the topic of artificial intelligence law in Slovenia extensively deals with algorithmic justice, e.g. how big data, algorithmic analytics, and machine learning are transforming criminal justice by creating new frameworks for understanding crime and their impact on human rights[37].

Legal publications in Slovenian legal journals also deal with questions relating to promoting non-discrimination in the use of AI in accordance with human rights[38]. Further topics that were analysed are the relationship of AI with the intellectual property law[39], the impact of AI on the daily work of attorneys, and the related legal and ethical dilemmas[40], the liability of state for the use of AI[41], and the civil liability of the AI operator/developer as enshrined in the new EU legislative initiatives[42] and the position of a potential future robot-judge[43]. There are also numerous short papers in the Slovenian weekly legal

[35] A. Aristovnik, P. Kovač, T. Jukić (eds.), *Digitalna preobrazba javne uprave v teoriji in praksi* (2024).
[36] P. Kovač & M. Babšek, *Umetna inteligenca v socialnih postopkih - možnosti razvoja in omejitve skozi prizmo empatije*, in A. Aristovnik, P. Kovač, T. Jukić (eds.), cit. at 36.
[37] See e.g. A. Završnik, *Algorithmic Justice: Algorithms and Big Data in Criminal Justice Settings*, 18(5) Eur. J. Crimin. 623–642 (2021); see also the volume in Slovene language, A. Završnik & K. Simončič (eds.), *Pravo in umetna inteligenca: vprašanja etike, človekovih pravic in družbene škode* (2021).
[38] V. Sancin, *Kalejdoskopski pogled na umetno inteligenco in pravo človekovih pravic*, 49(6/7) Podjetje in delo 1005–1015 (2023).
[39] M. Damjan, *Umetna inteligenca in pravice iz ustvarjalnosti*, 49(6/7) Podjetje in delo 1027–1037 (2023).
[40] D. Premelč, *Umetna inteligenca in prihodnost odvetniškega poklica*, 49(6/7) Podjetje in delo 1038–1050 (2023).
[41] M. Kovič Dine, *Odgovornost države za neuporabo oziroma neustrezno uporabo umetne inteligence pri preprečevanju poplav in vplivi na človekove pravice*, 49(6/7) Podjetje in delo 1051–1064 (2023).
[42] P. Weingerl, "Novosti glede odškodninske odgovornosti za umetno inteligenco" 46(6/7) Podjetje in delo 1195–1205 (2020).
[43] V. Trstenjak "Umetna inteligenca in pravo" (2022) 48(6/7) Podjetje in delo 902–910.

newspaper on various AI-related legal topics. They include the problem of stating reasons for administrative decisions in the AI environment[44], the help of AI in preventing natural catastrophes[45] and its use for humanitarian purposes[46], the legal position of autonomous drones used in international warfare[47], the use of automated decision-making in judicial procedures[48], the use of AI in the field of criminal law[49], and the general impact of AI on the legal profession[50].

Furthermore, the Open Data and Intellectual Property Institute (ODIPI), a research, educational and advisory institution working in the fields of Internet law and society operates in Slovenia. ODIPI is a non-profit organisation that specializes in providing legal information and advice in the field of copyrights related to science, research, and education. Its focus is mainly in the field of open science, open data, and data governance for AI, especially in relation to copyright law[51]. Together with Faculty of Law and Faculty of Computer and Information Science of University of Ljubljana, ODIPI co-organised the interdisciplinary School of Generative AI and Law which took part in November 2023 at the Faculty of Law of University of Ljubljana. The school focused on main ethical dilemmas that AI tools pose for humanity, individuals, states, and various organisations. Lectures and panel discussions centred on legal challenges posed by the rising use

[44] J. Fornazarič, "*Obrazložitev upravne odločbe v okolju UI*, 28 Pravna praksa 9–11 (2024).
[45] E. Plut, *Pomoč umetne inteligence pri preprečevanju naravnih katastrof*, 28 Pravna praksa 11–12 (2024).
[46] M. T. Veber, *Z umetno inteligenco podprta humanitarna pomoč in odgovornost zaščititi*, 25 Pravna praksa 14–15 (2023).
[47] A. Mediževec, *Avtonomni oborožitveni sistemi in umetna inteligenca*, 22-23 Pravna praksa 8–10 (2024).
[48] M. Hajd, *Avtomatizirano sprejemanje sodnih odločitev: med tehničnimi možnostmi in pravnimi omejitvami*, 14-15 Pravna praksa 11–13 (2024).
[49] A. Ferlinc, *Umetna inteligenca z vidika uporabe kazenskega prava*, 13 Pravna praksa 23 (2024).
[50] J. Kranjc, *Pomeni umetna inteligenca konec pravniškega poklica?*, 49/50 Pravna praksa 6–8 (2023).
[51] See the Open Data and Intellectual Property Institute (ODIPI) website at https://www.odipi.si/en/about-us, accessed 30 September 2024.

of AI in the areas of criminal law, human rights, personal data, and copyrights[52].

In June 2024, the Global Conference on AI and Human Rights took place at the Faculty of Law, University of Ljubljana, and was organised by Professor Vasilka Sancin. The conference aimed to explore the development and use of AI in relation to the state's obligations to safeguard the right to life. Topics discussed included AI's influence on human rights, especially the right to life, through both positive and negative state obligations.

The Slovenian Information Commissioner also plays an important role in public debate, providing guidance on how AI and algorithmic decision-making should align with privacy laws, particularly under the GDPR and ZVOP-2[53].

7. Conclusion

The integration of AI and algorithmic automation into Slovenian public administration is gradually advancing, but significant legal and ethical challenges remain. While existing laws such as ZUP and GDPR and ZVOP-2 offer some oversight, there is a clear need for a more comprehensive, AI-specific legal framework. The Slovenian government's NpAI provides a foundation for aligning AI development with societal norms and European Union values, focusing on transparency, fairness, and accountability.

AI in Slovenian public administration has shown potential in sectors like tax management, agriculture, and public procurement, where its use has improved efficiency and decision-making. However, concerns about privacy, human oversight, and the risks of delegating executive authority to automated systems must be addressed. Human oversight remains a crucial component to ensure that AI serves as a supportive tool rather than a replacement for human judgment.

[52] See the School of Generative AI and Law website at https://www.odipi.si/en/school-of-generative-ai-and-law, accessed 30 September 2024.

[53] See the website of the Slovenian Information Commissioner, at https://www.ip-rs.si/mnenja-zvop-2, accessed 30 September 2024.

Moving forward, Slovenia must ensure that the legal framework keeps pace with AI advancements, promoting innovation while safeguarding democratic principles, human rights, and data privacy. This will be essential for maintaining public trust in the growing role of AI within public administration.

THE LAW OF THE ALGORITHMIC STATE: THE CASE OF TÜRKIYE

*Pınar Çağlayan Aksoy**

Abstract

Türkiye has emerged as an early adopter in artificial intelligence (AI) governance, demonstrating significant progress over the past five years. As a member of the OECD's Global Partnership on AI (GPAI), Türkiye is actively trying to shape the global AI landscape, reflecting its commitment to digital transformation and innovation. This chapter examines Türkiye's evolving AI ecosystem, including the development of a national AI strategy, the role of the Ministry of Industry and Technology, and the establishment of the Digital Transformation Office of the Presidency of the Republic of Türkiye (DTO) in 2018, which has been pivotal in coordinating national efforts. The chapter also highlights Türkiye's advancement in the Government AI Readiness Index, rising from 53rd in 2021 to 47th in 2023.

Key sectors utilising AI, such as public administration and defence, are explored, along with the legal and regulatory frameworks, including the proposed AI Bill of 2024. Türkiye's collaborative approach, involving state, private sector, and non-governmental organisations, has laid the groundwork for a robust AI infrastructure, with TÜBİTAK's AI Institute playing a central role in research and innovation. Additionally, the paper explores the legal implications of AI in Türkiye, covering areas such as data protection, intellectual property, and e-commerce law.

This chapter provides a comprehensive overview of Türkiye's AI landscape, focusing on its digital transformation, key actors, and governance mechanisms, while offering projections for the future of AI regulation and policy in the country.

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1. Introduction

Türkiye has positioned itself as one of the early adopters in artificial intelligence (AI) governance. Over the past five years, the country's AI ecosystem has shown significant development, reflecting its commitment to integrating advanced technologies into various sectors. As a member of the Organisation for Economic Co-operation and Development's (OECD) Global Partnership on AI (GPAI), Türkiye is among 29 countries working collaboratively to shape the global AI landscape[1]. Following its membership approval at the GPAI Ministerial Council Meeting in Tokyo, Türkiye has accelerated its efforts to develop a national AI strategy and foster digital transformation through public-private collaboration[2].

Within the scope of the "Government AI Readiness Index Reports" prepared by Oxford Insights, in the evaluation of the readiness of countries to use AI systems in public services, it emerges that Türkiye's public sector AI readiness index is increasing every year. Türkiye ranked 53rd in the "Government AI Readiness Index" which includes parameters such as human resources, infrastructure, and vision in 2021. The country has increased its ranking to 49th in 2022 and 47th in 2023[3]. Türkiye's strategic location, young[4] and dynamic population, strong defence industry, and digitalisation infrastructure offer great potential for the adoption and development of AI technologies.

The Ministry of Industry and Technology of Türkiye has been instrumental in coordinating national efforts to develop a comprehensive AI framework. Similarly, the Turkish Presidency has emphasised that due to its far-reaching impacts and inherent

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[1] See Global Partnership on AI (GPAI), *Community* https://gpai.ai/community/, accessed 1 October 2024.

[2] H. Berktan, *Türkiye, Yapay Zeka Küresel Ortaklığı'na üye oldu* (Bloomberg HT, 2022) https://www.bloomberght.com/turkiye-yapay-zeka-kuresel-ortakligi-na-uye-oldu-2319849, accessed 1 October 2024.

[3] See Government AI Readiness Report (2023), at https://oxfordinsights.com/wp-content/uploads/2023/12/2023-Government-AI-Readiness-Index-2.pdf, accessed 1 October 2024.

[4] According to the results of the Address Based Population Registration System (ABPRS), as of the end of 2023, Türkiye's total population was 85 million 372 thousand 377 people, while the young population in the 15-24 age group was 12 million 872 thousand 39 people. The young population constituted 15.1% of the total population. See İstatistiklerle Gençlik (2023), at https://data.tuik.gov.tr/Bulten/Index?p=Istatistiklerle-Genclik-2023-53677#:~:text=Adrese%20Dayal%C4%B1%20N%C3%BCfus%20Kay%C4%B1t%20Sistemi,15%2C1'ini%20olu%C5%9Fturdu, accessed 1 October 2024.

risks, AI cannot be entrusted solely to a single nation or corporation[5]. This stance underlines the collaborative nature of Türkiye's approach, which includes the involvement of non-governmental organisations and private sector firms in building the necessary technical infrastructure, such as developing a national large language model.

The establishment of the Digital Transformation Office of the Presidency of the Republic of Türkiye (hereinafter "DTO") in 2018 is also regarded as a game-changer in the Turkish AI ecosystem. In recent years, Türkiye has also seen the establishment of numerous research and application centres dedicated to AI. One significant initiative is the AI Institute, established within the Scientific and Technological Research Council of Türkiye's (TÜBİTAK)[6] Informatics and Information Security Research Centre (BİLGEM), which has played a key role in advancing AI research and development. TÜBİTAK has issued special calls to foster innovation in this field, reflecting the country's dedication to becoming a leader in AI technology. The NGOs in the country contribute to awareness-raising, policy development, education, and support for innovation. While they are becoming increasingly effective day by day, their impact can be enhanced through greater collaboration, resource allocation, and public engagement.

AI tools have also been increasingly implemented in public administration, particularly to enhance public relations and provide swift and effective responses to citizens' concerns. These initiatives aim to serve the public interest and improve governmental efficiency[7].

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[5] Anadolu Ajansı, *Cumhurbaşkanı Yardımcısı Yılmaz: Yapay zekanın kalkınma sürecimize destek olmasını bekliyoruz* (24 May 2024), at https://www.aa.com.tr/tr/ekonomi/cumhurbaskani-yardimcisi-yilmaz-yapay-zekanin-kalkinma-surecimize-destek-olmasini-bekliyoruz/3228597, accessed 1 October 2024.

[6] The Minister of Industry and Technology recently announced that through TÜBİTAK's scholarship and support programmes, over 3,700 projects have been awarded grants. More than 1,300 individuals have received a total of 6.7 billion TL in funding. See TRT Haber, *Yapay Zekâ Projelerine 6,7 Milyar Lira Destek Verildi* (TRT Haber, 2024), at https://www.trthaber.com/haber/ekonomi/yapay-zeka-projelerine-67-milyar-lira-destek-verildi-820313.html, last accessed 1 October 2024.

[7] B. Çeber, *Yapay zekâ uygulamalarının halkla ilişkiler aracı olarak kullanımı* [Yayımlanmamış doktora tezi] (2022).

AI studies in Türkiye have primarily focused on AI tools' legal status and liability. Additionally, e-commerce law is significant in terms of data protection and the impact of robots in online environments in e-commerce. The question of copyright for developed robotic models has also sparked research in intellectual property rights. However, as will be discussed in detail below, there are many administrative bodies within the Turkish government dedicated to AI. Moreover, institutional transformations are occurring at both the central and local levels of decision-making. Therefore, the impact of the algorithmic shift on governance mechanisms in Türkiye undoubtedly warrants closer examination.

This paper, which focuses on Türkiye and the current state of algorithmic governance, is thus structured as follows. We begin by describing the digital transformation process in Türkiye, starting with the development of e-government, the key actors in the process, and AI strategy documents in the country (section 2). We then examine the main sectors utilising AI in Türkiye (section 3), followed by an exploration of the legal and regulatory framework surrounding the AI ecosystem, including the recent AI Bill proposed in 2024 (section 4). Lastly, we conclude with projections on the near future of AI governance in Türkiye and insights on what the future holds (section 5).

2. Digital Transformation in Türkiye: From E-Government towards Digital Government

2.1. Setting the Scene

The Eighth Five Year Development Plan prepared for the years 2001-2005 is an important long-term strategy document that determines Türkiye's 2023 vision. The importance given to e-government and digitalisation in this document has been effective in shaping the strategy documents in the following years. Following this, Türkiye's first holistic e-Government/e-transformation strategy was prepared in 2002. Both the 2002 e-government strategy and the long-term strategy included in the effectively shaped Eighth Five-Year Development Plan show that

Türkiye was following the main global trends in ensuring the coordination of e-government strategies in the early 2000s[8].

The initiation of digital transformation in Türkiye is often attributed to the establishment of the E-Government (E-devlet) Gateway, with many studies and publications highlighting this as the starting point of the country's digital evolution. With the introduction of e-government, which constitutes the first phase of digital transformation in public administration, the use of information and communication technologies in the delivery of public services was anticipated[9].

The e-Government Gateway, established on April 20, 2006, represents a significant milestone in Türkiye's digital journey, as it laid the foundation for the widespread digitisation of public services[10]. The e-Government Gateway is an electronic platform where digital public services provided by different institutions through different channels are offered from a single point in a faster and more secure way[11]. It started operating in 2008, and its scope has expanded day by day, turning into a platform where thousands of public services are provided and hundreds of public institutions are integrated. It offers a variety of services such as applications, queries, document production, payment, and information, depending on the purpose of use[12].

To overcome the lack of coordination regarding e-government, two goals were included in the Tenth Development Plan (2014-2018). The first aim was to harmonise the general strategic plans of institutions with information processing strategies, and the second was to ensure that public institutions

[8] Y. Uysal, S. Kurban, M. Zahid Çığman, *Cumhurbaşkanlığı Dijital Dönüşüm Ofisi ve E-Yönetişim*, 78 Dumlupınar Üniversitesi Sosyal Bilimler Dergisi 211–231, at 215 (October 2023).

[9] H.Y. Tamer & B. Övgün, *Yapay Zekâ Bağlamında Dijital Dönüşüm Ofisi*, 75(2) *Ankara Üniversitesi SBF Dergisi* 775–803, at 76 (2020).

[10] E-Devlet, at https://e-devlet.turkiye.gov.tr/bilgilendirme?konu=siteHakkinda, last accessed 1 October 2024.

[11] Also see A. Böcüoğlu-Bodur, *e-Devlet'e yapay zeka desteği geliyor* (Anadolu Ajansı, 27 October 2022), at https://www.aa.com.tr/tr/bilim-teknoloji/e-devlete-yapay-zeka-destegi-geliyor/2721985, last accessed 1 October 2024; H. Alpay Karasoy & P. Babaoğlu, *Türkiye'de Elektronik Devletten Dijital Devlete Doğru*, 12(23) *Karadeniz Sosyal Bilimler Dergisi* 397–416 (2020).

[12] Y. Uysal, S. Kurban, M. Çığman, cit. at 8, 218.

have a holistic approach to e-government[13]. The comprehensive Information Society Strategy and Action Plan published in 2015[14] can be interpreted as the first step taken in this regard[15]. One year later, Türkiye's first holistic e-government strategy document was published. The introduction to the strategy document, titled the 2016-2019 National e-Government Strategy and Action Plan clearly stated the need for strategic integrity in information technology governance. From this perspective, continuous communication, coordination, and cooperation of all stakeholders will be ensured in the studies carried out to determine e-government policies, development, presentation and use of services[16].

The implementation of E-Government in Türkiye has been revolutionary, ushering in a new era in the lives of citizens and solidifying the commitment to digitalisation. The announcement of the "Digital Türkiye Roadmap" by the Ministry of Science, Industry, and Technology in 2017 underscored this commitment as a strategic decision of the Republic of Türkiye[17]. According to the United Nations' 2020 E-Government Development Index, Türkiye ranked 53rd out of 193 countries in the e-government development index and 23rd in the e-participation index, highlighting the significant progress made in this domain. According to the United Nations e-Government Development Index (EDGI) 2024, Türkiye ranks 27th out of 193 countries in the e-Government Development Index[18].

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[13] T.C. Kalkınma Bakanlığı, *Onuncu Kalkınma Planı 2014-2018*, https://www.sbb.gov.tr/wp-content/uploads/2022/08/Onuncu_Kalkinma_Plani-2014-2018.pdf, last accessed 1 October 2024 at 55.

[14] T.C. Kalkınma Bakanlığı, *Information Society Strategy and Action Plan 2015-2018* http://www.bilgitoplumu.gov.tr/en/wp-content/uploads/2016/03/Information_Society_Strategy_and_Action_Plan_2015-2018.pdf, last accessed 1 October 2024, 143–162.

[15] Y. Uysal, S. Kurban, M. Çığman, cit. at 8, 216.

[16] Ulaştırma Denizcilik ve Haberleşme Bakanlığı, *2016-2019 Ulusal e-Devlet Stratejisi ve Eylem Planı* (2016) 7, at http://www.sp.gov.tr/upload/xSPTemelBelge/files/Swkoy+2016-2019-Ulusal-e-Devlet-Stratejisi-ve-Eylem-Plani.pdf, accessed 1 October 2024.

[17] A.C. Seçer, *Cumhuriyet'in 100. Yılında Yapay Zekânın Türkiye'de Kamu Güvenliğine Etkisi*, Türk İdare Dergisi 241–274, at 249 (2023).

[18] United Nations Department of Economic and Social Affairs, *E-Government Survey 2024*, at https://desapublications.un.org/sites/default/files/publications/2024-09/%28Web%20version%29%20E-

Within the framework of digital transformation, which has become essential both due to the global technological innovation process and the Covid-19 pandemic, especially electronic signature and digital onboarding processes have become an integral part of daily life in Türkiye. For example, for the banking and finance sector, one of the leading practice areas for digital onboarding, the number of real-person customers onboarding through remote applications in Türkiye as of August 2024 was 1,092,000, and 581,000 of these onboardings were concluded with customer representatives[19]. Similarly, the increase in the use of electronic signatures in Türkiye is quite remarkable. Individuals and organisations are increasingly moving away from paper in their daily transactions, acting with time and cost management and environmental awareness. According to the Market Data Report for the first quarter of 2024, published by the Information and Communication Technologies Authority, there are eight active electronic certificate service providers in Türkiye as of the first quarter of 2024, and the total number of qualified electronic certificates issued by these electronic certificate service providers as of the end of March 2024 was 8,559,252 with an increase of 3.4% compared to the previous quarter, and the number of qualified electronic certificates in active status was 2,438,080, with an increase of 3.2% compared with last quarter[20].

The advent of E-Government marked the beginning of a comprehensive digital transformation process within the public

Government%20Survey%202024%201392024.pdf, last accessed 1 October 2024. As to the EU score, in the 2024 e-Government Benchmark Report by the European Commission, Türkiye maintained its position among 37 countries, ranking 10th with a score of 83% over the two-year average (up from 81% in 2023), surpassing the EU27+ average. In the "User-Centricity" category, Türkiye improved its score by 1 point, reaching 100 points. In the "Transparency" category, it increased by 4 points, scoring 82 points, and in the "Key Enablers" category, the score rose by 2 points to 95. See European Commission, *e-Government Benchmark 2020*, https://op.europa.eu/en/publication-detail/-/publication/655a7ab7-381d-11ef-b441-01aa75ed71a1/language-en/format-PDF/source-330275714, last accessed 1 October 2024.

[19] Türkiye Bankalar Birliği, *Uzaktan ve Şubeden Müşteri Edinim İstatistikleri (Ağustos 2024)* (Eylül 2024), at https://www.tbb.org.tr/tr/banka-ve-sektor-bilgileri/istatistiki-raporlar/ocak--2024---uzaktan-ve-subeden-musteri-edinimi-istatistikleri/6257, accessed 1 October 2024.

[20] Bilgi Teknolojileri ve İletişim Kurumu, *Pazar Verileri Raporu 2024 1. Çeyrek*, https://www.btk.gov.tr/uploads/pages/pazar-verileri/2024-1-kurumdisifinal.pdf, last accessed 1 October 2024.

sector in Türkiye. However, the process of change and transformation in the provision of public services is not yet complete. In the past few years, this digital evolution has entered a new phase, often referred to as "Digital State", which is seen as the next stage of E-Government. It is important to note that the concept of the "Digital State" in Türkiye is not limited to the provision of robust online services. This transition involves the increased use of the internet and the integration of AI into the delivery of public services aiming for a higher level of digital transformation[21]. Türkiye's current trajectory indicates a shift from an IT-enabled bureaucracy – what is often called "E-Government" – towards a more advanced "Smart State" structure, driven by the country's strides in AI-related technologies[22]. This vision seeks to manage public services more intelligently and effectively, offering citizens efficient, faster, and more personalised services. Such developments highlight the evolution of technology in public administration, marking a crucial step towards a more innovative and efficient governance model[23]. It is foreseen that with the emergence and wide use of AI technologies, the concept of a Digital State will carry even more importance[24].

2.2. The Main Actors of the AI Ecosystem in Türkiye

(a) The Digital Transformation Office of the Presidency of the Republic of Türkiye (DTO)

The Republic of Türkiye transitioned from the parliamentary system to the presidential government system in 2017, and the new system was put into practice with the presidential election held on June 24, 2018. In the new system, the president, who is elected by the people and holds executive power alone, has become the main actor in determining and implementing public policies. Presidential

[21] H.Y. Tamer & B. Övgün, cit. at 9, 775–803; T. Avaner & M. Çelik, *Türkiye'de Dijital Dönüşüm Ofisi ve Yapay Zekâ Yönetimi: Büyük Veri ve Yapay Zekâ Daire Başkanlığı'nın Geleceği Üzerine*, 6(2) Medeniyet Araştırmaları Dergisi 1–18, at 10 (2021).

[22] Sevgi Kavut, "Toplumların Dijital Dönüşüm Aracı Olarak Yapay Zeka Çalışmaları: Türkiye'nin ve Türk Devletleri Teşkilatının Yapay Zeka Kullanımı Üzerine Bir Analiz (2024) 11(1) Erciyes İletişim Dergisi 325–344 at 329.

[23] A. Yalçın, Türkiye'de Kamu Kurumlarının Toplum İçin Geliştirdiği Yapay Zekâ Uygulamaları, 16(2) İstanbul Aydın Üniversitesi Sosyal Bilimler Dergisi 185–215 at 211 (2024).

[24] H.Y. Tamer & B. Övgün, cit. at 9, 777.

policy boards and presidential offices have emerged in addition to the ministries, as previously inexperienced public policy actors in Turkish public administration[25]. Some commentators state that these offices have the task of preparing preliminary research and development activities for public policies[26].

With the transition to the presidential government system, Türkiye has taken significant steps to consolidate the coordination of Digital Türkiye and cybersecurity under a single framework. The transformation from e-government to digital government took on a new dimension with the founding of the Presidential Digital Transformation Office (hereinafter "DTO") on July 10, 2018[27], marking a strategic shift in Türkiye's approach to digital governance[28]. The Presidential Decree's Article 525 formally established the DTO as a public legal entity reporting directly to the Presidency. With the issuance of Presidential Decree No. 48, the DTO was formally designated as the "Public Digital Transformation Leader" of Türkiye. According to a report prepared by the OECD in 2023, "[t]he Republic of Türkiye recognises that using digital technology and data to help the public sector become more responsive, resilient and proactive contributes to national competitiveness and economic growth. The introduction of a presidential system in 2018 placed greater importance on this objective and the Digital Transformation Office of the Presidency of Republic of Türkiye was created to provide a strong foundation for transitioning from e-government to digital government"[29].

The creation of the DTO was a response to the need to unify various digital transformation initiatives under one roof. These initiatives include digital transformation (E-Government), cybersecurity, national technologies, big data, and AI. The main task of the DTO is to lead digital transformation by overcoming the current shortcomings and ensuring coordination between public and private institutions. The establishment goals of the DTO are also to reduce bureaucracy by providing citizen-focused, reliable,

[25] Y. Uysal, S. Kurban, M. Çığman, cit. at 8, 220; H.Y. Tamer & B. Övgün, cit. at 9, 785.
[26] E. Akman, *Cumhurbaşkanlığı hükümet sisteminde kamu politikası aktörleri*, 15(1) PARADOKS Ekonomi, Sosyoloji ve Politika Dergisi 35–54, at 45 (2019).
[27] The Presidential Decree No. 1, published in the Official Gazette No. 30474.
[28] T. Avaner & M. Çelik, cit. at 21, 10.
[29] OECD, *Digital Government Review of Türkiye: Towards a Digitally-Enabled Government* (2023) 15.

transparent, accountable, and integrated public services. In addition, safe data storage in an electronic environment and minimising cybersecurity risks are among the important goals. The office also aims to provide high value-added services through more effective use of the e-Government Gateway, encourage technology production with national resources, and reduce external dependency[30].

The DTO is responsible for adopting strategies on issues related to digital transformation. The office is seen as a central coordinating body, bridging the public and private sectors and ensuring seamless integration across ministries[31]. Some commentators state that the DTO plays a pivotal role in acting as the coordinating body for the transition from "E-Government" to "A-Government" (Automated Government)[32]. While "E-Government" focuses on the content of services, "A-Government" is concerned with the processes by which these services are delivered, reflecting a more advanced stage of digital governance[33].

The establishment of DTO is considered a reflection of the holistic principle adopted in the National e-Government Strategy in the organisational structure[34]. However, the office was not directly given the task of determining the national e-Government strategy. Instead, areas such as big data, AI, and cyber security, which form parts of the digitalisation strategy were mentioned[35].

Under the Presidential Decree, the DTO is structured into several key service units/departments such as the Digital Transformation Coordination Department, Digital Technologies, Procurement, and Resource Management Department, Digital Expertise, Monitoring, and Evaluation Department, Cybersecurity Department, International Relations Department, Information Technology Department, Administrative Services Department, and

[30] Y. Uysal, S. Kurban, M. Çığman, cit. at 8, 220, 221 and 222.
[31] See Türkiye Cumhuriyeti Cumhurbaşkanlığı Dijital Dönüşüm Ofisi (2024), at https://cbddo.gov.tr/hakkimizda/, accessed 1 October 2024.
[32] T. Avaner & R. Feda, *Türk Kamu Yönetiminde Ofis Sistemi: E-Devlet Uygulamalarından Dijital Dönüşüm Ofisine*, 52(2) Amme İdaresi Dergisi 149–172 (2019), at https://ammeidaresi.hacibayram.edu.tr/hbv/252717393, accessed 1 October 2024, 67; M. Kağıtcıoğlu, *Yapay Zekâ ve İdare Hukuku* (Bugünden Geleceğe Yönelik Bir *Değerlendirme)*, 11(1) *Hacettepe Hukuk Fakültesi Dergisi* 118–168 (2021) https://doi.org/10.32957/hacettepehdf.874993 accessed 1 October 2024, 146.
[33] A.C. Seçer, cit. at 17, 247–248.
[34] Y. Uysal, S. Kurban, M. Çığman, cit. at 8, 216.
[35] Y. Uysal, S. Kurban, M. Çığman, cit. at 8, 216.

the Legal Consultancy, Big Data and Artificial Intelligence Applications Department. The latter, which deals specifically with AI applications is tasked with developing strategies and ensuring coordination in line with presidential policies to promote the effective use of big data and AI in the public sector. It supports projects and activities aimed at advancing big data technologies within the public domain. The department leads AI applications in priority project areas and oversees efforts in big data analytics, security, and privacy. It fosters inter-agency collaboration and coordinates the preparation of a public data dictionary to enhance data-driven decision-making processes in government. The department also develops strategies and coordinates efforts related to open data at the national level, establishing and managing the National Open Data Portal and setting the rules, principles, and standards for data sharing by public institutions. Additionally, the department proposes policies and strategies to position Türkiye as a regional hub for data storage, processing, and transmission activities[36].

The concept of AI in Türkiye has reached a different dimension with the Digital Transformation Office after 2019. It is stated that the relationship between AI and the state has begun to be established after this milestone[37]. Within the scope of AI, the DTO is involved in several cutting-edge projects. These include "Digital Twin" technology aimed at contributing to both science and industry, "Federated Learning" and "Differential Privacy" for data privacy and security, and efforts to make "Black Box" AI algorithms more transparent. The office is also creating "Adversarial Data" to prevent AI systems from being misled by malicious data, showcasing its commitment to securely and ethically advancing AI. Through these initiatives, the DTO is not only advancing Türkiye's digital transformation but also aims to position the country as a leader in the integration of AI and other emerging technologies into public administration.

According to the OECD, the political support and position of the DTO shows that Türkiye has an effective responsible institution that will lead the digital transformation agenda in the public sector. The DTO, which is the responsible institution in this regard and has

[36] See Türkiye Cumhuriyeti Cumhurbaşkanlığı Dijital Dönüşüm Ofisi (2024), at https://cbddo.gov.tr/hizmet-birimlerimiz/buyuk-veri-yapay-zeka-uygulamalari-dairesi-baskanligi/, accessed 1 October 2024.
[37] H.Y. Tamer & B. Övgün, cit. at 9, 797.

decision-making, coordination and consultancy roles and responsibilities, is in the process of developing a new, comprehensive digital state strategy[38].

(b) The Establishment of the TÜBİTAK Artificial Intelligence Institute

The Artificial Intelligence Institute founded under TÜBİTAK in 2020 in Türkiye is tasked with fostering a collaborative approach to AI by promoting pre-competitive cooperation and supporting the AI entrepreneurship ecosystem. It plays a vital role in training researchers in the field, while encouraging active collaboration among the various actors within the AI ecosystem. The institute facilitates the exchange of AI knowledge between universities, public research centres, and private sector organisations, ensuring continuous expertise transfer to those in need.

Additionally, it aims to develop pioneering, inclusive, and sustainable AI technologies that address both national and global challenges. To keep up with advancements in the field, the institute organises events such as seminars, symposiums, and conferences, promoting research and encouraging the practical implementation of new technologies. Furthermore, it provides infrastructure support to students conducting AI research and cooperates with national and international institutions. By monitoring global AI developments and contributing to relevant publications, the institute also works on shaping policies for AI applications[39].

Under the AI Institute, a new call was opened by the Research Support Programmes Presidency (ARDEB) in 2023 to meet the needs of public institutions using AI technologies. As a result, four project proposals were accepted and published in the field of financial technologies, two in Smart Education Technologies, and one in the field of E-Commerce Technologies[40].

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[38] OECD, cit. at 29, 51.

[39] See TÜBİTAK Yapay Zeka Enstitüsü, at https://en.bilgem.tubitak.gov.tr/en/yze-corporate/, last accessed 1 October 2024.

[40] The following examples demonstrate the AI projects carried out by TÜBİTAK with various public institutions under the leadership of the AI Institute: the Big Data Management Project, where big data and machine learning techniques are used for the General Directorate of Customs Enforcement of the Ministry of Trade; the Customs Scanning Network Project; a big data system that enables classification with AI within the framework of the National Land Cover Use Classification and Monitoring System (UASİS) of the Ministry of the

In order to increase the use of AI technologies in businesses, the 1711-Artificial Intelligence Ecosystem Call programme is being carried out within the TÜBİTAK AI Institute. The priority areas supported within the scope of the programme are "Smart Production Systems", "Smart Agriculture", "Food and Livestock", "Finance Technologies", "Climate Change and Sustainability" and "Smart Education Technologies". In this context, ten projects supported by the 2022 Call have been completed and eighteen projects within the 2023 Call are ongoing. The application process for the 2024 Call has not yet been completed. Many technologies such as GenAI technologies, machine learning, deep learning, natural language processing, computer vision and reinforcement learning, are used in these projects[41].

There are currently eighteen dedicated AI institutes or research centres founded across various public and private universities in Türkiye. This figure specifically includes centres focused solely on AI, excluding those with a broader technology focus, which are more numerous.

(c) The Establishment of Directorates and Departments under Several Ministries

Some departments and directorates within the ministries are also starting to establish public institutions specific to AI and big data. For example, the Big Data and Artificial Intelligence Applications Branch Office was established under the General Directorate of Computing at the Ministry of Justice; the Data Mining & Analysis, Big Data and Reporting Unit, and the Artificial Intelligence and Wearable Technologies Unit have been established within the Ministry of Health, and the Process Management and Artificial Intelligence Applications Branch Office was established within the Ministry of National Defence.

Environment and Urbanisation; projects carried out with the Presidency and Presidency of Defence Industries in the field of security, and finally, projects with the Ministry of Family and Social Services to identify the families of missing children in the provinces affected by the earthquakes centred in Kahramanmaraş in 2023.

[41] Kayseri Gündem, *Kamu Kurumlarında yapay zeka kullanımı belli oldu* (16 October 2024), at https://www.kayserigundem.com.tr/kamu-kurumlarinda-yapay-zeka-kullanimi-belli-oldu/109233/, accessed 1 October 2024.

(d) The Prominent NGOs in Türkiye that Focus on AI

There are many NGOs in Türkiye that deal with information technologies. However, the following three organisations focus specifically on AI: the Türkiye Artificial Intelligence Initiative (TRAI), the Artificial Intelligence Policies Association (AIPA), and AITR.

TRAI has been carrying out various activities such as TRAI Meetups, Türkiye Artificial Intelligence Summits, and artificial intelligence seminars and workshops, also preparing comprehensive yearly analysis reports with recommendations since 2017 to develop and strengthen Türkiye's AI ecosystem. The stakeholders of the initiative range from startups working in the field of AI to academics; from technology companies to public institutions and non-governmental organisations. It covers all private-sector organisations that want to include AI in their processes[42].

AIPA was founded in February 2021 as an independent association in Türkiye. It aims to raise public awareness about AI and enhance individual and institutional competencies in the field. It aims to establish communication among local, national, and global AI communities and contribute to public policies through partnerships with universities, the private sector, civil society, and public institutions. AIPA supports AI research at undergraduate and graduate levels, offers internship opportunities, and promotes entrepreneurship to help Türkiye become one of the top 10 global economies. The association generates and shares accurate AI-related information, monitors global technological developments, and supports public diplomacy efforts. It collaborates with technoparks, incubation centres, and international organisations to promote cooperation. AIPA also actively involves young people in decision-making processes, and researches the impact of AI across various sectors, such as the economy, education, law, security, and the environment, publishing its findings for public benefit[43].

Established in 2021, AITR aims to create a national and international ecosystem network for AI with public, private sector and academic consortiums through collaborations. In addition, it will undertake the task of evaluating and implementing the

[42] See TRAI, *Türkiye'de Yapay Zeka*, at https://turkiye.ai/homepage/, accessed 1 October 2024.

[43] See AIPA, *AI Policy Association*, at https://aipaturkey.org/hakkimizda, accessed 1 October 2024.

concepts of AI ethics, legal regulations for AI, transparency-accountability-inclusiveness of AI, use of AI in economic activities, dissemination of data use in public policies and decision-making mechanisms. It also aims to facilitate studies on research and development and teaching activities for AI technologies, and data economy as a whole[44].

2.3. The National AI Strategy of the Republic of Türkiye (2021)

A National AI Strategy Steering Committee was established in 2021, and its first meeting was held in January 2022. This committee defined several actions in the AI strategy that may directly affect data technical structure, public data skills and workforce, data governance and legislation. As a result, "National Artificial Intelligence Strategy (NAIS) 2021-2025" was prepared in cooperation with the Presidency of the DTO and the Ministry of Industry and Technology and with the effective participation of all relevant stakeholders. It entered into force upon its publication in the Official Gazette dated 20 August 2021 as no. 31574.

The NAIS is Türkiye's first national strategy document in the field of AI. It was prepared in line with the Eleventh Development Plan and the Presidential Annual Programmes with the visions of the "Digital Türkiye" and the "National Technology Initiative". A participatory approach was adopted in the preparation process of the Strategy and a comprehensive study was carried out with the contributions of many stakeholders such as public institutions, academia, private sector organisations, and NGOs, as well as professional and international organisations.

The NAIS is designed around the vision of "creating value on a global scale with an agile and sustainable AI ecosystem for a prosperous Türkiye". It lists six strategic priorities, namely, training AI experts and increasing employment in the domain; supporting research, entrepreneurship, and innovation; facilitating access to quality data and technical infrastructure; regulating to accelerate socioeconomic adaptation; strengthening international cooperation and accelerating structural and labour transformation.

Taking into account the recent developments in the field of AI and the 12th Development Plan, the Action Plan has been

[44] See AITR, *About Us*, at https://ai.org.tr/hakkimizda-2/#hakkimizda, last accessed 1 October 2024.

updated as the 2024-2025 Action Plan. The plan, which sets out the implementation details of the NAIS, was prepared under the coordination of the Secretariat in line with the decisions of the Steering Committee. It designates various responsible entities, including the Ministry of Industry and Technology, the Ministry of National Education, TÜBİTAK, the Presidential Investment Office, and the Presidential Digital Transformation Office. It also outlines 71 action plans and initiatives aimed at achieving the specified targets. The Action Plan monitoring and evaluation process is carried out quarterly with periodic feedback from the institutions.

The Action Plan includes the preparation of national occupational standards and qualifications in the field of AI and the establishment of a measurement-evaluation infrastructure. It is aimed to implement support programmes that will encourage the use of AI products resulting from research and development (R&D) studies by small and medium enterprises (SMEs), to prepare a guide to clarify the intellectual property rights of content created by AI, and to conduct standard studies for the patenting of AI products. In addition, the Action Plan provides for the creation of an inventory of AI companies and products and to develop mechanisms for global technology companies to conduct R&D activities in Türkiye. It aims to collect the data of public institutions in a central data area and make it available to researchers, to improve data governance regulations, and to establish national AI regulations compatible with international norms. The necessary tools for the audit of reliable AI and guides on algorithmic accountability will be prepared, and a "Trusted Artificial Intelligence Stamp" will be created. Lastly, it is planned to carry out the necessary policy and legislation studies for the detection and prevention of cyber threats enhanced with artificial intelligence. Additionally, the Action Plan states that relevant NGOs, universities, public institutions, and stakeholders in the private sector will also have responsibilities in carrying out the specified actions.

2.4. The 2023–2027 Defence Industry Sector Strategy Document

The document prepared by the Defence Industry Directorate of Türkiye describes the relations between defence AI development and the sub-sectors within the Turkish defence industry. It also sets the goals for defence AI development. It is observed that there is a

need for a common strategy, development of joint working models, and activities to increase awareness for users, academia, and the private sector to continue their AI studies efficiently.

In the future, it is planned to increase the interest and competition in critical technologies for Türkiye's future defence capabilities by expanding areas such as autonomy, swarm intelligence, cyber security, and AI. To achieve the desired technology goals, it is planned to increase AI competence on a sectoral basis. For this purpose, the "Defence Industry Artificial Intelligence Platform", which is a common platform where the entire sector can easily access various and numerous data, prevent loss of time by using previously developed and trained model libraries, and provide high capacity and performance hardware infrastructure needed for development, will be used by the entire sector.

Among the goals and activities is the development of AI applications to increase the autonomy level of uncrewed aerial vehicles (UAVs) and provide them with AI capabilities such as advanced autonomy, increased safety, environmental awareness, etc. The document also points out that with the start of the use of 5G in autonomous systems, competition in robotic systems and AI is expected to increase, and that efforts are being made to make the robotic systems under development compatible with 5G technology[45].

3. The Impact of AI

3.1. The AI Technologies Mostly Used in Türkiye

In line with the R&D priorities determined by the 11th Development Programme (2019-2023), Türkiye places a strong emphasis on AI-related technologies such as machine learning (ML), computer vision, and natural language processing (NLP), with a particular focus on applications in autonomous vehicles and

[45] Türkiye Cumhuriyeti Cumhurbaşkanlığı Savunma Sanayii Başkanlığı, *2023-2027 Savunma Sanayii Sektörel Strateji Dokümanı 'Teknolojide öncü, rekabetçi ve yetkin savunma sanayii'*, http://www.sp.gov.tr/upload/xSPTemelBelge/files/1Mmgq+Savunma_Sanayi_Sektorel_Strateji_Belgesi_2023-2027_.pdf, last accessed 1 October 2024.

robotics[46]. Autonomous systems, especially UAVs, have been a priority in Turkish AI development since 2011.

This focus has now expanded to encompass all types of uncrewed vehicles. The integration of AI into these systems is also gaining momentum[47]. Again, the general R&D priorities show how interconnected AI development is with other emerging technologies[48]. The combined advancement of AI and related technologies is at the heart of Türkiye's evolving AI ecosystem[49].

As of January 2022, the number of startups in the field of AI in Türkiye has reached 226. Of these AI startups, sixty-four focus on image processing, forty-three on machine learning, thirty on forecasting and data analytics, twenty on chatbots and conversational AI, nineteen on natural language processing, nine on optimisation, nine on robotic process automation, nine on autonomous vehicles, six on search engines and search assistants, five on smart platforms, and five on the Internet of Things (IoT)[50].

3.2. The Main Sectors in Türkiye that Utilise AI Technologies

A report was published by the Istanbul Chamber of Commerce Strategic Research Centre (ITOSAM) showing that the number of companies in Türkiye developing AI products has increased to 1,195 in 2024. The report also identified the sectors that develop the most AI products in the country. Accordingly, the top 10 sectors that use AI the most are information technologies and services, software development, media, education, health, business

[46] T.C. Kalkınma Bakanlığı, *On Birinci Kalkınma Planı 2019-2023*, https://www.sbb.gov.tr/wp-content/uploads/2022/07/On_Birinci_Kalkinma_Plani-2019-2023.pdf, last accessed 1 October 2024; TRAI, *Çalıştay Raporu 2023*, https://turkiye.ai/wp-content/uploads/2023/05/20230522_TRAI_Calistay_Raporu_01.pdf accessed 1 October 2024.

[47] Ç. Kurç, *Enabling Technology of Future Warfare: Turkey's Approach to Defence AI*, in H. Borchert, T. Schütz, J. Verbovszky (eds.), *The Very Long Game. Contributions to Security and Defence Studies* (2024) 331–352, at 332.

[48] Ç. Kurç, cit. at 47, 337.

[49] Ç. Kurç, cit. at 47, 332.

[50] S. Ceren Akkoyun, *Türkiye'deki Yapay Zeka Ekosistemi Büyümeye Devam Ediyor*, Anadolu Ajansı (29 January 2022), at https://www.aa.com.tr/tr/bilimteknoloji/turkiyedeki-yapay-zeka-ekosistemi-buyumeye-devam-ediyor/2488653, last accessed 1 October 2024.

consultancy and services, industrial automation, financial services, research services and biotechnology[51].

On September 16, 2024, a member of parliament directed a written question to the Ministry of Industry and Technology with regard to the use of AI in public bodies and institutions, their use cases, and levels. The ministry responded that there are currently six ministries (Ministry of Justice, Ministry of Family and Social Services, Ministry of Youth and Sports, Ministry of Health, Ministry of Treasury and Finance, and Ministry of Agriculture and Forestry) that utilise AI and that AI is also utilised in TÜBİTAK projects. Additionally, the Ministry stated that AI technologies are being used in public governance, security and surveillance, education, health, finance, energy, trade, and transportation within public institutions.

The strategic plans and guidelines the Turkish government has published so far suggest that the expected AI regulations will focus on the sectors of banking, finance, legal, health, automotive, personal data (privacy), e-commerce, intellectual property, capital markets, national security, and e-government. In particular, the NAIS focuses on promoting the use and development of AI, specifically generative AI, to support and assist national security and cybersecurity, telecommunications, 5G, blockchain, electronic judiciary systems, automation of trademark and patent procedures, automation of record keeping in export/import transactions, preventive medicine and vaccination, prevention of fraud and money laundering and e-finance[52].

3.3. Examples of Current Sectors/Projects Utilising AI

In Türkiye, institutional structures for AI are being developed at both the central and local government levels. Public institutions are producing AI-powered tools for smart transport, energy management, environmental monitoring, education, healthcare, the food sector, communications, and social projects, making these services available to citizens. AI and its applications

[51] Daily Sabah, *AI Rush: Experts Weigh In on Türkiye's Approach & Endeavors*, at https://www.dailysabah.com/business/tech/ai-rush-experts-weigh-in-on-turkiyes-approach-endeavors, last accessed 1 October 2024.

[52] White Case, *AI Watch: Global Regulatory Tracker – Turkey*, at https://www.whitecase.com/insight-our-thinking/ai-watch-global-regulatory-tracker-turkey, last accessed 1 October 2024.

are included in many top policy documents of public institutions, from strategic plans to investment programmes[53].

The primary goals of the AI applications implemented by Turkish Government institutions include reducing costs and increasing efficiency in the public sector, improving public relations and service delivery, assisting with security and intelligence through data provision, and supporting educators by generating knowledge in the field of education[54].

In this part of the paper, we will outline the main sectors of the public administration that currently use AI technologies in Türkiye.

(a) The Judiciary

In the wake of the pandemic, significant steps have been taken to strengthen the technical and legal foundations for participation in hearings via audio and video transmission in Türkiye. Previously met with caution, electronic hearings are gradually becoming more accepted in Turkish legal practice, with e-hearing requests being approved as technical infrastructure permits.[55] According to the Minister of Justice, from September 15, 2020, to April 8, 2024, a total of 1,671,657 e-hearings were conducted across 3,044 civil courts nationwide[56]. This shows that Türkiye has made notable progress in the transition toward e-government.

More AI features are being added to the procedures in the judicial branch. The National Judiciary Informatics System (UYAP) has significantly digitised judicial processes in Türkiye. Over time, it has introduced features such as electronic file access, digital signatures, e-filing of lawsuits, and video conferencing for lawyers to attend hearings. One area where AI is applied in UYAP is in handling "decisions on affiliation". In appeals cases, the distribution of cases to the appropriate chambers is based on the

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[53] M.S. Erbaş, *Türk Kamu Yönetiminde Stratejik Yönetim ve Dijital Dönüşüm Bağlamında Yapay Zekanın Kullanımı*, 95(496) Türk İdare Dergisi, 194, 195 (2023).

[54] A. Yalçın, *Türkiye'de Kamu Kurumlarının Toplum İçin Geliştirdiği Yapay Zekâ Uygulamaları*, 16(2) İstanbul Aydın Üniversitesi Sosyal Bilimler Dergisi 185–215, 189 (2024).

[55] H. Hasırcı, *Medeni Yargılama Hukukunda Elektronik Duruşmalarda Aleniyetin Sağlanması*, 14(56) Türkiye Adalet Akademisi Dergisi 449–464, at 458 (2023).

[56] G. Varol, *Ses ve Görüntü Nakli Yoluyla Duruşma Yapılmasına İlişkin Olarak 7251 Sayılı Kanun'la Yapılan Değişikliklerin Doğrudanlık İlkesi Kapsamında Değerlendirilmesi*, 8(1) Anadolu Üniversitesi Hukuk Fakültesi Dergisi 71–92 (2022), https://doi.org/10.54699/andhd.1039509, accessed 1 October 2022.

principle of division of labour. If an appeals chamber determines during the preliminary review that it is not the correct chamber, it assigns the case to the appropriate one—these are known as "decisions on affiliation". Incorrect chamber assignments can delay proceedings. In order to address this issue, UYAP developed an AI model targeting the 50 most common issues leading to affiliation decisions in civil courts. This AI solution has achieved an 88% accuracy rate in assigning cases to the correct chamber based on the allocation of cases based on specialisation[57].

The Supreme Court (Court of Cassation) Precedent Centre is designed to promote consistency in legal practice and support quick access to justice by facilitating the widespread reach and use of Supreme Court precedents. With the help of AI, users can quickly access relevant Supreme Court rulings in their searches. The system allows for fast access to up-to-date rulings, while AI expands the search to include more related decisions. Users can save the rulings, receive automatic notifications when new rulings matching their criteria are added, and review summaries of decisions to quickly assess important details[58].

(b) Municipalities

AI is increasingly being employed in Turkish municipal services. AI is applied in various areas such as transportation services (e.g., Konya Metropolitan Municipality), traffic management (e.g., Ankara Metropolitan Municipality), automation and AI in disaster management, and the implementation of Digital Twin applications in cities (e.g., Istanbul, Balıkesir Metropolitan Municipalities). Additionally, AI is used for communication and complaint management systems (e.g. İstanbul Başiskele, Bağcılar). However, it is noted as a shortcoming that the principles of responsible AI are not featured on the websites of municipalities utilising AI[59].

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[57] S. Gül, *Yargıda Yapay Zekâ ve Büyük Veri Teknolojileri*, at the *156. Yıl Danıştay ve İdari Yargı Günü Sempozyumu* (2024), presented by the General Director of Information Technology at the Ministry of Justice, Servet Gül, 10 May 2024, 3.

[58] Yargıtay, *Yargıtay İçtihat Merkezi* (13 December 2023), at https://www.yargitay.gov.tr/item/1763/yargitay-ictihat-merkezi-kullanima-acilmistir, last accessed 1 October 2024. Also see Şermin Birtane, *Hakime Yardımcı Yapay Zeka*, 15(59) *Türkiye Adalet Akademisi Dergisi* 251 (2024).

[59] Itır Akdoğan, *Yerel Demokrasi için Kent Yönetişimi ve Sorumlu Yapay Zekâ Etkileşimi*, 6 *TESEV Değerlendirme Notları* (2024), at https://www.tesev.org.tr/tr/research/yerel-demokrasi-icinkent-yonetisimi-

(c) Public Security and Protection of Citizens

In Türkiye, projects developed to ensure public safety have made crime prevention and predictive policing mechanisms more efficient and controlled. In this context, AI and autonomous systems play an active role in enhancing coordination and collaboration within law enforcement[60]. There are various examples of crime prevention tools operating with AI integration in public safety efforts across Türkiye.

The Ministry of Foreign Affairs has decided to implement the "HIZIR" chatbot application, which will provide around-the-clock, AI-powered responses to Turkish citizens abroad, without being limited by office hours. This AI-based solution is designed to assist citizens and aims to offer effective responses to their concerns[61].

The AI-based application "ASENA" is developed by the Ministry of Interior and launched in March 2021 to track drug-related activities. This software has been instrumental in identifying numerous criminal elements and has greatly aided relevant units in detecting crimes. According to statements from the Ministry of Interior, thanks to the ASENA software, interventions were made in 6,636 incidents over the course of 1.5 years[62].

To ensure coordination and collaboration between organisations operating in the field of internal security, the Ministry of Interior established Security and Emergency Coordination Centres (GAMER) in all 81 provinces of Türkiye. Through the GAMER project, incidents occurring across Türkiye can be monitored in real time, and social events such as protests and demonstrations can be tracked live. The GAMER Software Project is a system capable of transmitting real-time data, audio, and video,

ve-sorumlu-yapay-zeka-etkilesimi/, last accessed 1 October 2024. The author also notes that when she interviewed municipal employees who frequently use AI, she learned that the institution's AI policy is primarily aimed at enhancing service quality and improving time management for employees, but, for example, does not play a role in internal governance.

[60] A.C. Seçer, cit. at 17, 253.

[61] T.C. Dışişleri Bakanlığı, *Tweet* (X, 10 August 2022) https://x.com/TC_Disisleri/status/1557703876064825346, last accessed 1 October 2024.

[62] T.C. İçişleri Bakanlığı, *Analiz Sistemleri Narkotik Ağı ASENA Yazılımı Sayesinde 1,5 Yılda 6 Bin 636 Müdahale Edildi* (2023), https://www.icisleri.gov.tr/analiz-sistemleri-narkotik-agi-asena-yazilimi-sayesinde-15-yilda-6-bin-636-mudahale-edildi, last accessed 1 October 2024.

designed to prevent events that disrupt public order and safety, and to facilitate coordination during emergencies that arise from such incidents[63].

The activities of GAMER aimed at ensuring public safety should not be viewed solely as maintaining general law and order. This software can also be a solution tool for other societal crises, such as natural disasters or pandemics. It is believed that organisations involved in crisis management in Türkiye can become more effective in decision-making before and after disasters by utilising AI. AI is considered crucial to generating potential crisis scenarios and create related simulations[64]. Development efforts for the application are ongoing, and with the implementation of Next-Generation Emergency Call Centres, data mining and incident analysis will be conducted. Additionally, AI will be employed for tasks such as predicting incidents in advance[65].

The integration of AI technology will further enhance the accuracy and efficiency of these systems, making them even more effective for traffic control and law enforcement. A system has been established where footage from camera recording systems will be transmitted to a central system via wireless communication and analysed using AI software. This project includes features such as motion detection, selected area violation detection, object detection, person identification, crowd counting, anomaly detection based on human movement direction, vehicle presence, type, and direction detection, the use of solar panel poles, and wireless capabilities. In this context, AI-powered image transmission stands out as a key element of the project[66].

(d) Defence

The report prepared in 2024 by the NGO TRAI highlights that the defence industry is one of Türkiye's strategically important

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[63] Türkiye Cumhuriyeti İçişleri Bakanlığı, *Gamer Projesi* (2024), at https://www.icisleri.gov.tr/bilgiteknolojileri/gamer-projesi#:~:text=T%C3%BCrkiye%20genelinde%20meydana%20gelen%20olaylar,toplumsal%20olaylar%20canl%C4%B1%20takip%20edilebilmektedir, last accessed 1 October 2024.

[64] B. İşbir & A. Kaya, *Güvenlik ve Acil Durum Koordinasyon Merkezi (GAMER) Ve Yapay Zekânın Afetlerde Uygulanabilirliği*, 5(2) Afet ve Risk Dergisi 601–622, at 619 (2022), (https://doi.org/10.35341/afet.1102768).

[65] Türkiye Cumhuriyeti İçişleri Bakanlığı, cit. at 65.

[66] A.C. Seçer, cit. at 17, 258.

(key) sectors. AI plays a key role in the development of autonomous systems, security analyses, and defence strategies. Investments in this sector are expected to enhance Türkiye's defence capabilities and provide a significant advantage in global competition[67].

The use of UAVs in public safety in Türkiye has increased in recent years. The Turkish police and military employ UAVs for various purposes, such as border surveillance, crowd control, and counter-terrorism[68] operations. The integration of AI into public safety UAVs in Türkiye has further enhanced their capabilities[69]. For example, the Turkish military utilises AI-supported UAVs for target tracking and data analysis in operations against terrorist organisations. In recent years, Türkiye has emerged as a leading country in the international competition for AI-powered air defence systems. The AI-integrated UAVs produced by Türkiye are now being exported to several countries, including Ukraine, Qatar, Tunisia, and Azerbaijan[70].

According to a strategy document published in 2022 by the Ministry of Defence Industries of Türkiye, with the integration of AI into UAVs, the level of autonomy has been increased, allowing missions to be executed with minimal human interaction and fewer errors[71]. The primary focus of defence AI development in Türkiye is enhancing the capabilities of various autonomous systems, including sensors and decision support systems. Türkiye envisions that the future of warfare will be shaped by the use of autonomous

[67] TRAI, *Yapay Zeka ile Kalkınma ve Gelişim Planı, Türkiye Yapay Zeka İnisiyatifi 2024 Çalıştay Raporu* (2024), at https://turkiye.ai/wp-content/uploads/2024/07/TRAI-2024-Calistay-Raporu.pdf, accessed 1 October 2024, 6.

[68] It has been reported that Turkish authorities have utilised the AI-based FETÖ-Meter system in post-coup dismissals from the Turkish armed forces for the fight against terrorism. The FETÖ-Meter system is an Excel-based algorithm, designed by Resigned Rear Admiral Cihat Yaycı, to profile all active and retired military officers. See Anadolu Ajansı, *FETÖ-Metre ile Kriptolar Deşifre Ediliyor* (Anadolu Ajansı, 14 August 2018), https://www.aa.com.tr/tr/15-temmuz-darbe-girisimi/feto-metre-ile-kriptolar-desifre-ediliyor/1251818, accessed 1 October 2024.

[69] A.C. Seçer, cit. at 17, 260.

[70] Cumhur Kartal Yıldız, *Uluslararası Alanda Artan Yapay Zekâ Rekabeti ve Türkiye'de Sürdürülen Yapay Zekâ Çalışmaları*, 4(1) UPA Strategic Affairs 4–22, 14 (2023).

[71] Türkiye Cumhuriyeti Cumhurbaşkanlığı Savunma Sanayii Başkanlığı, cit. at 45, 166.

systems[72]. It is expected that AI-powered UAV swarms will become game-changing elements on the battlefield. These AI-supported systems will significantly improve the speed of intelligence gathering, surveillance, target acquisition, and reconnaissance. As a result, military decision-making processes will be expedited as commanders gain quicker access to vital information. When combined with AI-enhanced decision-making systems, commanders will be able to make faster and more informed decisions. Furthermore, with their increased capability to gather information, militaries and intelligence agencies could advance their predictive analysis, improving strategic planning and response times[73].

Recently, the Defence Industry Agency (*Savunma Sanayi Başkanlığı*, "SSB") established an AI-specific organisation, the Artificial Intelligence Talent Cluster of Defence Industry (SAYZEK). SSB aims to foster defence innovation by centrally coordinating stakeholders in defence AI. Türkiye expects to acquire capabilities mainly in autonomous systems and data collection and management. Thus, developing defence AI and integrating it with uncrewed systems would advance their capabilities, both when operating alone and as a swarm. Further gains result from collecting battlefield data, such as data fusion, prioritisation, and aiding the decision-maker[74].

(e) Education

The EBA Virtual Assistant is a digital tool developed with AI support to provide instant and effective information to EBA users. It was designed to handle the high demand experienced during the remote education process in the COVID-19 pandemic. By using AI, the EBA Assistant allows students, teachers, and parents to easily access the information they need without having to navigate the site and provides quick responses to frequently asked questions[75].

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[72] Ç. Kurç, cit. at 47, 333.
[73] Ç. Kurç, cit. at 47, 333.
[74] Ç. Kurç, cit. at 47, 334.
[75] See MEB, *Yapay Zekalı EBA Asistan 10 Milyon Soruya Cevap Verdi*, https://meslekitanitim.meb.gov.tr/yapay-zekli-eba-asistan-10-milyon-soruya-cevap-verdi/haber/20992/tr, last accessed 1 October 2024.

(f) Health

The General Directorate of Health Information Systems, operating under the Ministry of Health, has established the "Artificial Intelligence and Innovative Technologies Unit" to guide the integration of AI and wearable technologies into the healthcare sector. This unit also collaborates with the "Turkish Institute for Health Data Research and Artificial Intelligence Applications", which was formed by the Turkish Health Institutes Presidency[76].

The duties and responsibilities of the Department of Artificial Intelligence and Innovative Technologies under the Ministry of Health include identifying processes that can be improved and problems that can be solved using AI technologies, developing or commissioning AI solutions tailored to needs, implementing and maintaining these solutions, and staying updated on advancements in AI technologies. Additionally, the department is tasked with monitoring emerging technologies such as cloud computing and blockchain, establishing collaborations with stakeholders such as universities, institutes, and healthcare organisations, ensuring interoperability between existing and new projects, and preparing or commissioning educational materials for the systems developed or acquired. The department is also responsible for carrying out other tasks assigned by the general director[77].

The projects carried out within the Ministry of Health focus on reducing unnecessary tests, achieving cost savings, enabling faster reporting, and enhancing diagnostic and treatment capabilities. These efforts reflect the goal of delivering more efficient, timely, and cost-effective healthcare services through the effective use of technology and data-driven solutions in the health sector[78]. The Turkish Ministry of Health has stated that AI-based applications, which have been implemented and are planned to be deployed, are becoming more widespread, significantly improving

[76] See T.C. Sağlık Bakanlığı, *Türkiye Yapay Zekâ Enstitüsü (TUYZE)*, at https://tuyze.tuseb.gov.tr/, last accessed 1 October 2024.
[77] See T.C. Sağlık Bakanlığı, *Yapay Zekâ ve Yenilikçi Teknolojiler Daire Başkanlığı*, at https://sbsgm.saglik.gov.tr/TR-104172/yapay-zeka-ve-yenilikci-teknolojiler-daire-baskanligi.html, last accessed 1 October 2024.
[78] T.C. Cumhurbaşkanlığı Dijital Dönüşüm Ofisi, *Türkiye Ulusal Yapay Zekâ Stratejisi 2021-2025*, https://cbddo.gov.tr/SharedFolderServer/Genel/File/TR-UlusalYZStratejisi2021-2025.pdf, last accessed 1 October 2024, 16-25.

quality while reducing costs[79]. For instance, "Neyim Var" ("What is wrong with me?") is an AI-based e-triage application that has been used for three years to prevent patients from going to the wrong specialty and to provide them with effective treatment as quickly as possible[80].

The "Turkish Brain Project" employs AI-based systems to analyse brain MRI images. Following these AI-driven analyses, the MRI results are presented primarily to doctors for evaluation. This approach enables faster identification of patients requiring urgent intervention, significantly reducing the risk of complications[81].

Recently, The Head of Istanbul Emergency Health Services stated that the most suitable hospital for emergencies in Istanbul is determined using AI. He explained that they input data on all hospitals — public and private — such as their specialisations, patient load, bed availability, ICU status, and staff presence. The ambulance system is also fully integrated with AI tools, which automatically suggest the most suitable hospital so that the nearest and best option can be selected. This ensures patients are taken to the right facility, avoiding the need for a second transfer in the heavy traffic in İstanbul[82].

As is evident from the above, while AI applications in global examples typically offer hospital-based or location-specific services, in Türkiye these services are provided on a national scale, with new applications being developed daily[83].

(g) Taxation

In Türkiye, both the Ministry of the Treasury and Finance and the Revenue Administration are making the necessary

[79] G. Yorgancıoğlu Tarcan, P. Yalçın Balçık, N.B. Sebik, *Türkiye ve Dünyada Sağlık Hizmetlerinde Yapay Zekâ*, 14(1) Mersin Üniversitesi Tıp Fakültesi Lokman Hekim Tıp Tarihi ve Folklorik Tıp Dergisi 50–60 (2024), https://doi.org/10.31020/mutftd.1278529, last accessed 1 October 2024, 54.

[80] G. Yorgancıoğlu Tarcan, P. Yalçın Balçık, N.B. Sebik, cit. at 79, 55; M.S. Erbaş, cit. at 53, 194.

[81] Dijital Dönüşüm Ofisi, *Türk Beyin Projesi (TBP)*, at https://cbddo.gov.tr/projeler/tbp/, last accessed 1 October 2024.

[82] Anadolu Ajansı, *İstanbul'da Vakaya En Uygun Hastane Yapay Zekâ Yardımıyla Belirleniyor* (2024), https://www.aa.com.tr/tr/bilim-teknoloji/istanbulda-vakaya-en-uygun-hastane-yapay-zeka-yardimiyla-belirleniyor/3333222, last accessed 1 October 2024.

[83] G. Yorgancıoğlu Tarcan, P. Yalçın Balçık, N.B. Sebik, cit. at 79, 58.

investments and efforts to adapt to digital transformation[84]. The Ministry has developed "GİBİ", a digital tax assistant powered by ML. GİBİ provides taxpayers with quick answers to their questions 24/7 without the need for passwords or login. Users can access a pool of 593 answers and ask 9,782 different types of questions. It offers instant access to up-to-date information on regulations and provides automatic notifications regarding periodic rights and obligations. GİBİ is continuously updated and expanded based on incoming questions, allowing users to save time efficiently[85].

In addition to taxpayer services, AI is used in Türkiye for tax audits, particularly in risk analysis. The SARP[86] application identifies taxpayers who may be involved in fraudulent document preparation[87]. Each month, VAT taxpayers who meet certain risk criteria are assigned a risk score based on a specific algorithm. These scores are then evaluated by the Revenue Administration to assess the likelihood of fraudulent or misleading document preparation[88].

(h) Intellectual and Industrial Rights Management

The Turkish Patent and Trademark Office, specifically the Patent Department, has shared that it uses deep learning, NLP, and ML applications. Various internal and external services have been employed for these applications[89].

(i) Transportation

The General Directorate of Highways under the Ministry of Transport uses AI systems to detect, classify, and assess highway

[84] M. Tuba Rüzgar, *Türkiye'de Ekonomi Reform Paketi Kapsamında Dijital Vergi Dairesi Ve Dijital Vergi Asistanı Sisteminin Kurulması*, 4(1) Turkuaz Uluslararası Sosyo-Ekonomik Stratejik Araştırmalar Dergisi (2022), at https://dergipark.org.tr/tr/pub/eisrcdergi/issue/73690/1214358, last accessed 1 October 2024.

[85] See Gelir İdaresi Başkanlığı, *Dijital Vergi Asistanı GİBİ*, https://teknoloji.gib.gov.tr/dijital-vergi-asistani-gibi, accessed 1 October 2024.

[86] Gelir İdaresi Başkanlığı, *Hizmetlerimiz*, https://teknoloji.gib.gov.tr/teknoloji/hizmetlerimiz.html, accessed 1 October 2024.

[87] T. Akdoğan & H. Yavuz, *Dijitalleşme Perspektifinden Vergi Uyumu* (2022) 66.

[88] N. Karataş Durmuş & İ. Arıtı Erdem, *Vergi İdaresi 3.0: Yapay Zeka Perspektifinden Bir İnceleme*, 184 Maliye Dergisi 225–253, at 243 (2023).

[89] Istanbul Barosu, *Yapay Zeka Çalışma Grubu* (2023), 14, at https://www.istanbulbarosu.org.tr/files/komisyonlar/yzcg/yzcg_kamu.pdf, last accessed 1 October 2024.

surface deterioration, as well as to identify areas known as "black spots" where frequent traffic accidents occur, enhancing road safety. Among the AI-based services provided by the General Directorate of Highways (KGM) are some applications for use within Intelligent Transport Systems. These systems consider various parameters such as pedestrian and vehicle presence, queue lengths, and the relationship between intersections, all based on algorithms developed within traffic engineering.

Through the Image-Based Information Management System (GTBYS) established by KGM, a 68,680-kilometre highway network is monitored using panoramic cameras and mobile LiDAR technology. This system has collected approximately 3 million data points from 40 types of inventories, including bridges, traffic signs, drainage, signalling, guardrails, and pavement, creating a large data-driven information system. ML automatically obscures licence plates and faces in images. Additionally, AI is used to automatically detect 25 types of traffic signs and mark their coordinates on maps[90].

The AI-Based Chatbot (Flight Assistant) Application, developed by the General Directorate of State Airports Authority, uses a deep learning model and natural language processing libraries to correct erroneous inputs. This application simplifies the navigation of pages on institutional websites. It allows users to obtain various details, such as departure and arrival points of flights, times, integration with airport navigation services, and weather conditions based on location, through conversational interaction. Designed for air travellers, the application provides quick and easy access to relevant flight information. Feedback and complaints received through the call centre are reviewed, and updates are made as deemed appropriate[91].

One of the key areas where AI is used in Türkiye is railways. TCDD Transportation AŞ has established an AI-supported Train Monitoring and Coordination Centre, operating 24/7 across seven regional directorates. Passenger and freight trains are monitored in real-time at this centre through cameras installed on locomotives ("Makinist Kaynak Planlama ve Büyük Veri Analitiği" project). The

[90] A. Böcüoğlu Bodur & M. Çalkaya, *Ulaştırmanın bütün modlarında yapay zeka kullanımı artıyor* (27 April 2024), at https://www.aa.com.tr/tr/dosya-haber/ulastirmanin-butun-modlarinda-yapay-zeka-kullanimi-artiyor/3203757, last accessed 1 October 2024.
[91] İstanbul Barosu, cit. at 89, 11.

system automatically detects conditions such as sleepiness, distraction, fatigue, or loss of focus, triggering alarms and providing necessary warnings to the operators ("Seyrüsefer Güvenlik Platformu"). Additionally, TCDD Taşımacılık AŞ has developed an "intelligent robotic software" equipped with the most advanced form of AI. This software quickly and efficiently addresses citizens' requests, autonomously responding with high accuracy and without the need for human intervention ("Yolcu Taşıma Platformunun (YTP) Geliştirilmesi ve Sürdürülebilirliğinin Sağlanması")[92].

(j) Sectors in Which AI Is Planned for Implementation

The AITR 2024 report, prepared with contributions from a wide range of participants from both the public and private sectors in Türkiye, highlights the significant importance of integrating AI technologies, particularly in sectors such as healthcare, agriculture, automotive, industry, and defence[93].

AI in healthcare is still in its early stages in Türkiye, but is rapidly expanding. Because of the large population, rising healthcare expenditure, and shortage of healthcare professionals, there is much interest in AI-driven healthcare solutions. Various health facilities are using AI to improve patient outcomes and reduce healthcare costs. In Türkiye, private sector businesses are additionally making investments in AI-driven healthcare solutions. Local entrepreneurs and startups are creating AI-powered medical devices such as diagnostic tools and wearable sensors, while global corporations are collaborating with local healthcare providers to provide AI-based solutions[94]. In city hospitals of Türkiye which are established with a public-private partnership model, some studies are being carried out by the Ministry of Health with the help of imaging and NLP in order to increase the quality of service[95].

In May 2024, the vice president of the Republic listed other key sectors that were on the short-term agenda of Türkiye. It was

[92] A. Böcüoğlu Bodur & M. Çalkaya, cit. at 90.

[93] TRAI, *2024 Çalıştay Raporu*, https://turkiye.ai/wp-content/uploads/2024/07/TRAI-2024-Calistay-Raporu.pdf, last accessed 1 October 2024, 37.

[94] See Insights10, *Turkey Artificial Intelligence (AI) in Healthcare Market Analysis*, https://www.insights10.com/report/turkey-artificial-intelligence-ai-in-healthcare-market-analysis/, last accessed 1 October 2024.

[95] G. Yorgancıoğlu Tarcan, P. Yalçın Balçık, N.B. Sebik, cit. at 79, 55.

stated that one of the key areas of focus is ensuring tax justice and detecting tax evasion and erroneous declarations. The vice president also emphasised that there is consensus on the need for a more extensive use of AI in the water and energy sectors. Moreover, he noted that AI will be more widely utilised in disaster management to reduce risks, respond to crises, and support post-crisis recovery efforts. Additionally, he mentioned that projects related to the analysis, classification, summarising, and interpretation of documents, as well as semantic search and anonymisation in judicial decisions, are part of Türkiye's AI agenda within the national judiciary project[96].

In an effort to make İzmir a leading city in AI usage, the Mayor of İzmir established the Artificial Intelligence and Smart Cities Branch Directorate on May 21, 2024. This new branch, under İzmir Innovation and Technology Inc., aims to initiate AI-driven transportation in the city. AI will optimise public transportation schedules based on vehicle occupancy, traffic conditions, and user habits. Additionally, unmanned parking systems will offer faster, more cost-effective parking services while saving resources and paper. AI will also detect physical damage to buses in seconds. The "İzmirim Card" mobile app will evolve beyond a simple balance loader, becoming an AI-powered hub for all public transportation matters. Moreover, AI will extend beyond transportation, with the Citizens Communication Centre (HIM) using AI assistants to track and report recurring complaints, streamlining communication with relevant departments[97].

At the 2024 event commemorating the anniversary of the Court of Accounts, the use of AI in auditing was extensively discussed. It was highlighted that AI technologies could offer significant advantages to the auditing profession. AI has the potential to automate routine tasks that were previously done manually, allowing auditors to perform their work more quickly and efficiently[98].

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[96] Anadolu Ajansı, cit. at 5.

[97] İzmir Büyükşehir Belediyesi, *İzmir Ulaşımında Yapay Zeka Dönemi Başlayacak* (2 August 2024), at https://www.izmir.bel.tr/tr/Haberler/izmir-ulasiminda-yapay-zeka-donemi-baslayacak/50639/156, last accessed 1 October 2024.

[98] A. Taha Koç, *Dijital Türkiye ve Milli Teknoloji Hamlesinin Dijital Dönüşüm Boyutu*, in *Denetimde Dijital Dönüşüm Ve Yapay Zeka Sayıştayın 161. Kuruluş Yıl Dönümü Paneli* (2023) 61–65, at https://www.sayistay.gov.tr/files/3118_161YIL_PANEL_YAPAYZEKA-2024v4-kapakl%C4%B1.pdf, last accessed 1 October 2024.

The Public Procurement Authority has recently signed a contract with HAVELSAN to leverage AI applications in its business processes. The aim is to enhance service quality, streamline administrative workflows, and create a more systematic approach to data management and reporting, while integrating AI into the institution's technological framework. The MAIN (Multifunctional Artificial Intelligence Network) platform will be installed and operated on the institution's servers, offering a range of advanced capabilities. These include summarising content in seconds, retrieving information from open-source data, and even coding – all of which can be further expanded. While the initial version of MAIN focuses on text-based functions, future updates will incorporate image and audio processing[99]. There are some projections with regard to AI integration to the administrative judiciary: in the Turkish administrative justice system, court hearings are rare, with judges typically making decisions without them. Assistive AI is expected to speed up administrative litigation and lead to faster, more accurate rulings on administrative matters[100]. In his 2023-2024 Judicial Year Opening Speech, the President of the Supreme Court of Appeals highlighted ongoing preparations for AI-supported tools, including drafting reasoned decisions and generating reports, in addition to the existing case law centre. He emphasised that AI could enhance various judicial processes, such as workload distribution, file management, preliminary examinations, and employee performance assessments. He also noted that implementing these AI-driven systems requires maintaining digital records with data integrity, a capability Türkiye already has[101].

[99] Anadolu Ajansı, *Kamu Alımlarında Yapay Zekâ Dönemi Başlıyor* (Anadolu Ajansı, 2024), at https://www.aa.com.tr/tr/bilim-teknoloji/kamu-alimlarinda-yapay-zeka-donemi-basliyor/3327318, last accessed 1 October 2024.

[100] H. Alphan Dinçkol, *Yapay Zekânın İdari Yargı Üzerindeki Etkileri*, 12(1) Sakarya Üniversitesi Hukuk Fakültesi Dergisi 47–77, at 64–65 (2024), https://doi.org/10.56701/shd.1407948, last accessed 1 October 2024.

[101] Mehmet Akarca (Yargıtay Başkanı), *2023-2024 Adli Yıl Açış Konuşması* (1 October 2023), at https://www.yargitay.gov.tr/documents/ek1-1693980966.pdf, last accessed 1 October 2024.

4. The Regulatory Framework Surrounding the Use of AI in Türkiye

The rapid development of AI technologies has heightened the importance of shaping the ethical, legal, and policy aspects of this field. In Türkiye, the Digital Transformation Office (DTO), as the policy-making body leading the digital and technological advancements, has been actively involved in creating a legal framework to support and regulate AI for the past five years. While the DTO has published several strategic planning notes aimed at promoting the use and development of AI in Türkiye – such as investing in education, training, research, and infrastructure – it has not yet addressed AI regulation. It should also be added that there are currently no high court cases before the Court of Cassation or the Council of State that deal with the conflicts arising from algorithmic decision-making systems relied on by the Turkish public administration. As of now, although there are development plans and strategy documents prepared by various public institutions that aim to foster alignment with the EU AI Act, Türkiye does not have dedicated legislation or regulations exclusively focused on AI. Some authors state that the primary and urgent need in the regulation and oversight of AI is the enactment of an AI Law[102]. Similarly, in the 12th Development Plan, it is stated that "challenges such as the rapid and uncontrolled development of AI technologies outside of regulatory mechanisms, and the necessity for international cooperation in implementing measures, make it difficult to address issues in this field. The magnitude of opportunities and threats that AI could bring necessitates regulations at both national and international levels"[103].

In sum, the current legal framework is not up to date concerning AI and data protection. Additionally, the Turkish judicial system does not utilise robotic process automation or AI applications. There are areas for improvement in the implementation of the national AI strategy published in 2021, and public institutions lack a uniform set of ethical principles for AI.

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[102] E. Baydemir, *Türk İdari Teşkilatında Yapay Zekâ Alanında Düzenleyici ve Denetleyici Kurum İhtiyacı*, 4(2) *Kırıkkale Hukuk Mecmuası* 869–900 (2024), at https://doi.org/10.59909/khm.1528254, last accessed 1 October 2024, 874.

[103] T.C. Cumhurbaşkanlığı Strateji ve Bütçe Başkanlığı, *Twelfth Development Plan 2024-2028*, 8, at https://www.sbb.gov.tr/wp-content/uploads/2024/06/Twelfth-Development-Plan_2024-2028.pdf, last accessed 1 October 2024.

Issues such as bias in data, the reliability of data sets, cybersecurity, the protection of personal data, and the need for transparency and accountability in AI applications remain significant areas that need to be addressed[104].

4.1. The AI Bill of 2024

The Artificial Intelligence Law Bill, which envisions new rules related to AI, was submitted to the Grand National Assembly of Türkiye on June 24, 2024. The Bill is currently with the parliamentary committee review. If the Bill passes this review, it will be presented to the Turkish Grand National Assembly for voting.

The Bill's rationale states that AI is creating revolutionary changes and rapidly increasing its impact in critical areas such as healthcare, education, security, and transport. Within this context, it emphasises the need to establish a legal framework to prevent potential violations of individual rights and freedoms that could result from the misuse or even malicious use of AI.

The AI Bill comprises eight articles that seek to set a general framework around AI regulation based on the principles of safety, transparency, equality, accountability, and privacy. It lacks any specificity as to how these principles will be adopted and enforced in practice. Whether the majority of political parties will support the AI Bill remains to be seen[105].

The rationale also highlights the importance of defining and implementing safe, ethical, and fair standards for the development, use, and distribution of AI. The proposal aims to maximise the benefits derived from the opportunities provided by AI while minimising potential risks and harms.

Under Article 2 of the AI Bill, AI is defined as "computer-based systems that can carry out human-like skills such as learning, rationalisation, problem-solving, perception, semantic comprehension and cognitive functions." The AI Bill determines four different compliance roles, namely, "provider", "implementor/user", "importer", and "distributor", and introduces the blank term that covers all these four roles, "operator". Following the AI Guidelines and the National AI Strategy, the Bill requires that all "operators" comply with the

[104] TRAI, cit. at 67, 33.
[105] White Case, cit. at 52.

general principles of safety, transparency, equality, accountability, and privacy. The Bill introduces a monetary fine for the provision of "false information".

The AI Bill refers to "high-risk AI systems" and requires their registration but fails to define what high-risk AI systems are. In the rationale, the AI Bill gives examples of "self-driving vehicles", "medical diagnosis systems", and "judicial systems that rely on AI" as high-risk AI systems. The AI Bill does not introduce any specific obligations for high-risk AI systems. However, it is stated that competent supervisory authorities have to conduct continuous monitoring and auditing of such systems. The AI Bill calls for specific, secondary regulations dealing with high-risk AI systems, which may clarify some of these uncertain provisions. The same pathway was chosen for regulations regarding crypto assets.

The AI Bill introduces annual turnover-based fines for certain noncompliance scenarios. Use of prohibited AI applications or systems may be penalised by a fine of up to 35 million TL (approx. USD 1 million) or up to 7 percent of the subject's global turnover of the preceding fiscal year. Non-compliance with the provisions of the AI Bill may be penalised by a fine of up to TL 15 million (approx. USD 455,000) or 3 percent of the subject's global turnover of the preceding fiscal year. Provision of false information may be penalised by a fine up to TL 7.5 million (approx. USD 245.000) or 1.5 per cent of the subject's global turnover of the preceding fiscal year. However, the Bill fails to define what constitutes false information and which authority is responsible for making that determination.

4.2. The Need for a Dedicated Regulatory Body for AI

There is currently no AI-specific regulation or regulator in Türkiye. It is stated that the Turkish Data Protection Authority may indirectly regulate the field of AI technologies through various privacy-focused regulations in place in Türkiye, since it is the main privacy regulator under Türkiye's Personal Data Protection Law. The Information and Communications Technologies Authority (BTK), the Financial Crimes Investigation Board (MASAK), the Capital Markets Board (SPK), the Banking Regulation and Supervision Agency (BDDK), the Advertising Board, and the Turkish Competition Authority may each regulate AI indirectly when the matter falls within their respective jurisdictions.

The recently proposed Artificial Intelligence Bill also envisages the establishment of a supervisory mechanism in the field of AI. Indeed, there are numerous examples where public authorities utilise AI technologies in law enforcement activities and the delivery of public services. AI technologies have become widespread in activities with a predominantly administrative focus. The impact of AI on administrative law, both in other countries and within Türkiye's public administration, is becoming increasingly apparent. Despite these developments, the current administrative bodies in Türkiye are not dedicated to AI oversight. Therefore, there is a need for a national institution specifically responsible for regulating and overseeing AI in Türkiye[106]. The AI Bill, however, neither proposes an AI-specific regulator nor designates any existing regulatory body to assume the role or the responsibility for the registration of high-risk AI systems. The absence of an administrative authority to oversee the regulation of AI in Türkiye is viewed by some authors as a significant shortcoming of the Bill[107].

The regulation of AI requires expertise. Additionally, the use of AI by both the public and private sectors is directly related to fundamental rights and freedoms. For this reason, there is a need for a national institution dedicated to AI, specifically a "regulatory and supervisory institution". Establishing such a regulatory body is consistent with past practices in Türkiye, as seen in the creation of institutions like the Personal Data Protection Authority (KVKK) and the Information and Communication Technologies Authority (BTK), both of which were founded with the primary goal of protecting fundamental rights and freedoms[108]. The establishment of a national authority would serve multiple purposes, including the regulation of AI technologies, the promotion of ethical standards, and the facilitation of public trust in AI systems.

It is of great importance that policymakers in Türkiye take proactive steps to address the regulatory gap in the AI field. This

[106] E. Baydemir, cit. at 102, 888.

[107] The DTO does not serve as a higher authority in the field of AI. As an office responsible for coordinating digitalisation developments and facilitating communication between institutions, it cannot engage in regulatory or supervisory activities. The DTO is primarily designed to contribute to the implementation of the government's digitalisation policies. See E. Baydemir, cit. at 102, 886.

[108] E. Baydemir, cit. at 102, 891.

includes revising existing administrative structures to accommodate the challenges posed by AI technologies and ensuring that a national authority is empowered to fulfil its mandate effectively. It remains to be seen whether Türkiye's forthcoming (primary and secondary) AI regulations will establish a new regulator specifically for AI or assign specific roles and responsibilities to the existing regulatory bodies[109].

4.3. The Application of Existing Rules: Laws and (New) Guidelines

Türkiye has a comprehensive legislative framework for technology, encompassing areas such as cybersecurity, the internet, and social media. All these laws and regulations can affect the use of AI. For example, the Law on Consumer Protection can be applied to practices that influence consumer behaviour, such as advertising. Law on Regulation of Electronic Commerce can be applied in cases where AI technologies are used in e-commerce transactions. The Laws on the Protection of Copyright and Industrial Property might have implications for AI-generated content and works[110].

To the extent AI technologies are used to commit any of the offences set out in the Turkish Criminal Code, penalties envisioned therein will apply. For instance, the Turkish Criminal Code deprecates "misinformation" and "fake news" on the internet, which may have implications for AI-generated content. The Law on the "Regulation of broadcasts through the internet and combatting crimes committed through such publications" regulates criminal content online, including on social media platforms, and may have implications on AI-generated content, as well as on the use of AI in other functions of these platforms such as personalised advertising.

In September 2023, the Turkish Advertising Board imposed fines on advertisers to penalise practices that rely on AI-generated information to promote their products without "any factual research" proving "product or brand superiority". For example,

[109] White Case, cit. at 52.

[110] For detailed info, see C. Özbek & V. Özer Özbek, *Yapay Zekânın Dâhil Olduğu Suçlar Bakımından Ceza Hukuku Sorumluluğunun Belirlenmesi* (2019) Ceza Hukuku Dergisi 603–622; Istanbul Barosu, *Yapay Zeka Çalışma Grubu* (2021), at https://www.istanbulbarosu.org.tr/files/komisyonlar/yzcg/2021yzcgyillikrapor.pdf, last accessed 1 October 2024; M. Balcı & K. Çakır, *Yapay Zeka Kullanarak İşlenen Dolandırıcılık Suçu ve Dolandırıcılığın Yapay Zeka ile Tespiti*, 18(52) Ceza Hukuku Dergisi 209– 230 (2023).

one clothing brand claimed in its online advertisements that it is "the biggest fashion retailer in Türkiye according to ChatGPT". The Advertising Board found this claim to be "unreliable" because there was no research or independent resource to support it and answers generated by ChatGPT may not always be "accurate or up to date"[111].

The Law on the Protection of Personal Data regulates the collection, use, processing, and localisation of personal information and may impact all AI applications that rely on personal data. The Turkish Data Protection Authority closely monitors technological developments and has prepared privacy-focused guidelines specifically for the use of AI technologies. The Authority published the "Guidelines on Good Practices regarding the Protection of Personal Data in the Banking Sector"[112], that provide recommendations for financial institutions and banks processing personal data, including through AI-based products. Additionally, the Turkish Data Protection Authority has issued "Guidelines on the Protection of Privacy in Mobile Applications"[113] which stipulate that AI-based mobile applications should adhere to the principles of transparency and predictability. Although these guidelines are non-binding, they are significant as they reflect the current stance of the Turkish Data Protection Authority on AI-related data protection matters.

The Turkish Data Protection Authority's "Recommendations on the Protection of Personal Data in the Field of Artificial Intelligence"[114] outline expectations regarding the respect for fundamental human rights and freedoms, as well as the imposition of limits on the use of personal data in AI applications.

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[111] Ticaret Bakanlığı, *Reklam Kurulu yapay zeka reklamlarını ilk kez incelemeye aldı*, at https://ticaret.gov.tr/haberler/reklam-kurulu-yapay-zeka-reklamlarini-ilk-kez-incelemeye-aldi, last accessed 1 October 2024.

[112] Kişisel Verileri Koruma Kurumu, *Kişisel Verilerin Korunmasına İlişkin Bankacılık Sektörü İyi Uygulamalar Rehberi* (July 2022), at https://kvkk.gov.tr/SharedFolderServer/CMSFiles/12236bad-8de1-4c94-aad6-bb93f53271fb.pdf, last accessed 1 October 2024.

[113] Kişisel Verileri Koruma Kurumu, *Mobil Uygulamalarda Mahremiyetin Korunmasına Yönelik Tavsiyeler Aralık 2023* (2023), at https://kvkk.gov.tr/SharedFolderServer/CMSFiles/8ba209bb-fa93-4479-84f0-dd55aac97a0f.pdf, last accessed 1 October 2024.

[114] Kişisel Verileri Koruma Kurumu, *Yapay Zekâ Alanında Kişisel Verilerin Korunmasına Dair Tavsiyeler* (2021), https://www.kvkk.gov.tr/Icerik/7048/Yapay-Zeka-Alaninda-Kisisel-Verilerin-Korunmasina-Dair-Tavsiyeler, last accessed 1 October 2024.

Additionally, this document, which covers AI developers, producers, service providers, and decision-makers, includes recommendations for protecting personal data in AI applications. It is noted that, in the preparation of these recommendations, the "OECD Recommendation of the Council on Artificial Intelligence" by the OECD, the "Guidelines on Artificial Intelligence and Data Protection" published by the Council of Europe's Directorate General of Human Rights and Rule of Law, and the European Union's "Ethical Guidelines for Trustworthy AI", were utilised.

According to the Recommendations, AI applications should be developed and implemented with respect for individuals' fundamental rights and freedoms. AI-based personal data processing and data collection should adhere to principles such as legality, fairness, proportionality, accountability, transparency, accuracy, purpose limitation, and data security.

If AI activities involve high-risk personal data processing, a privacy impact assessment should be conducted to ensure compliance with the law. From the initial stages, AI projects should comply with data protection regulations, and all systems should be designed and managed with data protection in mind. When processing special categories of personal data, stricter technical and administrative measures must be implemented. If the desired outcome can be achieved without processing personal data, anonymisation methods should be used. The legal relationship between stakeholders (data controllers or processors) in AI projects should be defined at the beginning and aligned with data protection regulations.

The Recommendations also establish that a privacy-centric approach consistent with national and international regulations should be adopted in design. A prudent approach based on risk prevention and mitigation measures should be employed. The quality, source, amount, category, and content of personal data used should be evaluated to ensure minimal data usage, and the accuracy of the developed model should be continuously monitored.

It is highlighted that algorithms used outside their intended context should be carefully evaluated for their potential negative impact on individuals and society. AI systems should respect individuals' national and international rights concerning personal data processing. Products and services should be designed to ensure that individuals are not subject to decisions solely based on

automated processing without considering their views. Algorithms that ensure accountability for all stakeholders throughout the product lifecycle should be adopted, and users should have the right to stop data processing and opt for data deletion, destruction, or anonymisation. Moreover, individuals interacting with the application should be informed about the reasons for data processing, the methods used, and potential outcomes, and an effective consent mechanism should be designed where necessary.

The document also includes recommendations for decision-makers. Accordingly, the principle of accountability should be observed at all stages. Risk assessment procedures for data protection should be adopted, and an application matrix based on sector, application, hardware, and software should be created. Appropriate measures, such as codes of conduct and certification mechanisms, should be implemented.

According to the Turkish Data Protection Authority, human intervention in decision-making processes should be allowed to preserve individuals' freedom to distrust the outcomes of AI-generated recommendations. Moreover, cooperation between supervisory authorities and other relevant organisations on data privacy, consumer protection, competition, and anti-discrimination should be encouraged.

Individuals, groups, and stakeholders should be informed and actively involved in discussing the role of AI in shaping social dynamics and decision-making processes through big data systems. Open-source mechanisms should be encouraged to create a digital ecosystem that supports secure, fair, legal, and ethical data sharing.

The Higher Education Board also published guidance in May 2024 specifically addressing GenAI, entitled "Ethical Guide for the Use of Generative Artificial Intelligence in Scientific Research and Publication Activities of Higher Education Institutions"[115]. In these guidelines, the fundamental ethical values in the use of AI have been identified as transparency, integrity, care, fairness and respect, the protection of privacy and confidentiality, accountability, and a commitment to contributing to ethical principles. Although there is currently no direct regulation concerning AI in Türkiye, it has been emphasised that researchers,

[115] Yüksek Öğretim Kurulu, *Yapay Zekâ Kullanımına Dair Etik Rehber* (May 2024), at https://www.yok.gov.tr/Documents/2024/yapay-zeka-kullanimina-dair-etik-rehber.pdf , last accessed 1 October 2024

particularly when utilising GenAI technologies, should take into account documents such as the Personal Data Protection Law (KVKK), the Higher Education Law, the Law on Intellectual and Artistic Works, and the Regulation on Graduate Education and Examinations.

With Principle Decision No. 2024/108 (Ethical Conduct Principles for Public Officials in the Use of Artificial Intelligence Systems) dated September 10, 2024, the Ethics Committee established the principles public officials must adhere to when using AI. Public officials may utilise AI systems in the course of providing public services. In such cases, they bear a responsibility to uphold ethical standards and adhere to principles of ethical conduct in service to society. Accordingly, public officials must carry out their duties in alignment with principles detailed in the decision, such as competence, integrity, impartiality, transparency, confidentiality and security, accountability, and managerial responsibility[116].

5. Conclusion

The Republic of Türkiye recognises that leveraging digital technology and data to make the public sector more responsive, resilient, and proactive contributes significantly to national competitiveness and economic growth. The DTO, established after the transition to the presidential system, aims to provide a strong foundation for transitioning from e-government to digital government[117].

Monitoring developments worldwide and in the European Union, Türkiye is expected to place even greater emphasis on implementing sanctions and measures to mitigate risks, protect individuals, companies, and national security, as well as establish regulations and guidelines. Although Türkiye is not a member of the EU, its strong economic ties and collaborations with the Union may prompt the country to align its legal framework with EU standards, particularly concerning the EU AI Act. While Türkiye

[116] Etik Kurulu, *2024/108 Sayılı İlke Kararı: Yapay Zekâ Sistemlerinin Kullanımında Kamu Görevlilerinin Uyması Gereken Etik Davranış İlkeleri* (2024), at https://www.etik.gov.tr/icerikler/2024-108-sayili-ilke-karari-yapay-zeka-sistemlerinin-kullaniminda-kamu-gorevlilerinin-uymasi-gereken-etik-davranis-ilkeleri/, last accessed 1 October 2024.
[117] OECD, cit. at 29, 15.

may voluntarily align with the Act, compliance may also be necessary due to the broad territorial scope of the regulation. Like the GDPR, the EU AI Act will impose requirements on those involved in AI systems connected to the EU market, including providers, deployers, and manufacturers, even if they are outside the EU. Companies operating in Türkiye will therefore have to plan for compliance with both national AI guidelines and the EU AI Act, as the latter may set global AI standards[118]. Given Türkiye's growing interest in AI development and the potential for public and private projects to fall under the Act's scope, it is likely that the Act will have significant implications[119].

Recently, the Vice President of Türkiye emphasised that the country's efforts are primarily focused on productive AI technologies, aiming to develop the AI startup ecosystem and strengthen the national workforce through structural transformation. He stated: "[w]e expect AI to focus on sectors and areas that will enhance our economic and social welfare and support our development process. We aim to foster the creation of more startups in our country, develop financial infrastructures for this purpose, and promote public-private partnerships".

In addition, it is crucial for Türkiye to implement preventive policies and practices addressing the risks associated with the widespread use of AI technologies in both the public and private sectors. Efforts should include working on AI ethics, law, and the status of AI entities, collaborating with institutions that house AI experts, and emphasising international cooperation. Enhancing dialogue between the public and private sectors, as well as with academics, expanding technoparks, and establishing AI units within central and local governments are equally important. Furthermore, Türkiye should take security measures stemming from AI development and seize opportunities for job creation[120].

When it comes to the use of AI in the Turkish judiciary, several considerations arise. First and foremost, a successful AI system in courts requires a large amount of data. The existing case law in Türkiye could partially provide the data necessary for AI

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[118] Y. Hamzaoğlu & M. Hamzaoğlu, *Turkey: The evolving approach to AI governance*, at https://www.dataguidance.com/opinion/turkey-evolving-approach-ai-governance, last accessed 1 October 2024.

[119] White Case, cit. at 52.

[120] M. Metin Uzun, *Yapay Zekâ: Fırsatlar ve Tehditler: Yapay Zekâ Stratejileri ve Türkiye*, 2 ULİSA Mayıs 2020 Raporu 34–44, at 42–43 (2020).

implementation in the judiciary. However, according to Article 8 of Law No. 2802 on Judges and Prosecutors, judicial authority is vested in human judges, and the judiciary is a profession reserved for Turkish citizens. For this reason alone, it is argued that AI-powered robots cannot directly render decisions in Türkiye. Furthermore, since the process by which AI reaches a conclusion and produces output is often not comprehensible to humans (the "black box" issue), AI cannot currently be used as a supportive tool for making judicial decisions. Whether it involves systems that assist judges or robots directly participating in proceedings, the use of AI in any stage of the judiciary requires explicit legislative approval. Similarly, the principle of a natural judge, which is a component of the right to a fair trial, would lead to the same conclusion. Therefore, unless the legislature explicitly regulates the scope and functions of AI in the judiciary, its use will be unconstitutional[121].

To improve Türkiye's level of AI readiness, several challenges must be addressed. The country's digital infrastructure lacks high-speed internet access and advanced computing capabilities. Ensuring internet access for all segments of society and improving digital literacy are crucial to keeping up with global developments and making services provided by AI more accessible[122]. There is a shortage of a digitally skilled workforce, partly due to an education system that lacks sufficient AI and data science-focused programmes, making workforce adaptation to these technologies difficult. Additionally, current regulations that are in place to ensure the ethical and safe use of AI technologies are insufficient[123]. There is a need for the establishment of at least some basic principles through a regulatory framework for administrative procedures, particularly in cases where administrative decisions are made and communicated through algorithms[124]. The long-standing critique of the absence of an administrative procedure law in Türkiye, which is a common point of discussion in administrative

[121] H. Bilgin, *Yapay Zekânın Mahkeme Kararlarında Kullanımına Uluslararası Bir Bakış ve Robot Hâkimler Hakkında Düşünceler*, 13(2) İnÜHFD 405–419, at 416 (2022).
[122] A. Yalçın, *Türkiye'de Kamu Kurumlarının Toplum İçin Geliştirdiği Yapay Zeka Uygulamaları*, 16(2) *İstanbul Aydın Üniversitesi Sosyal Bilimler Dergisi* 185–215, at 212–212 (2024).
[123] TechLetter, *Is Türkiye Ready for AI?*, https://www.techletter.co/p/is-turkiye-ready-for-ai, last accessed 1 October 2024.
[124] O. Çağdaş Artantaş, *Algoritmik İdari İşlemler*, in G. Okuyucu Ergün (ed.), *Informatics and Law* (2024) 31–57, at 54.

law, may perhaps be resolved through the integration of AI into administrative processes[125].

In conclusion, Türkiye recognises the importance of focusing on AI to keep pace with Industry 4.0. As the country advances in AI development, aligning with international standards, enhancing infrastructure, and fostering legal and ethical use will be essential steps toward establishing a robust and competitive AI ecosystem. The recent Parliamentary Decision, published in the Official Gazette on October 5, 2024, regarding the establishment of a commission to explore the benefits of AI, develop the necessary legal infrastructure, and identify measures to mitigate AI-related risks, signals that efforts to establish a regulatory framework for AI will accelerate in 2025[126].

[125] M. Kağıtcıoğlu, cit. at 32, 158.

[126] T.C. Resmî Gazete, *Yapay Zekânın Kazanımlarına Yönelik Adımların Belirlenmesi, Hukuki Altyapının Oluşturulması ve Yapay Zekâ Kullanımındaki Risklerin Önlenmesine İlişkin Tedbirlerin Belirlenmesine Dair Meclis Araştırması Komisyonu Kurulması Kararı* (5 October 2024), at https://www.resmigazete.gov.tr/eskiler/2024/10/20241005-1.pdf, accessed 6 October 2024.

THE LAW OF THE ALGORITHMIC STATE IN CENTRAL AND EASTERN EUROPE. COMPARATIVE REMARKS

Angela Ferrari Zumbini and Martina Conticelli***

Abstract

The paper aims to provide some concluding remarks on the law of the algorithmic state in Central and Eastern Europe. It presents the main findings emerging from a comparison of the experiences of the selected jurisdictions and sheds light on the current state of the art concerning the digitalisation process, the legal frameworks for automated decisions, the level of e-government and digital administration development, as well as the extent to which Artificial Intelligence (AI) is being adopted in administrative activities, the sectors involved, and the emerging issues. The legal systems being considered are compared and contrasted, emphasising both their similarities and differences. Lastly, the results obtained from this collective work leave the floor open for a discussion of the issues and also suggest further areas of research.

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1. Introducing the Conclusions

In their opening remarks, Marta Infantino and Mauro Bussani stated that the general aim of this special issue is to offer a comparative overview of how the current algorithmic turn is affecting the legal framework and daily operations of the administrative state in various Central and Eastern European countries. They began by observing that the current scholarly debate in English on the 'Algorithmic State' has tended to overlook Central and Eastern Europe. They argue that contemporary discourse regarding law and technology rarely considers developments beyond the United States, Western Europe, and occasionally North-East Asia, concluding that bridging this gap is the main purpose of this special issue[1].

Even a quick glance at the papers gathered in this collection reveals not only that e-government and digital administration are widespread in the jurisdictions concerned but also that a comparative analysis focused on these countries was not only necessary but also overdue.

Indeed, from a comparative perspective, this study shows that automated decision-making and the use of artificial intelligence are becoming increasingly central to administrative action also in Central and Eastern Europe, even if most countries are still experimenting with what we might call a phase of transition from the e-government experience to the so-called digital state.

We refer to the concept of e-government to designate experiences where the use of platforms to share or gather information, or to deliver files and other basic activities, is widespread, while we use the notion of digital state to describe jurisdictions where administrations, occasionally or constantly, rely on artificial intelligence in proceedings that affect individuals.

This concluding paper aims to summarise and discuss the main issues that emerge from the comparative analysis of the preceding papers, to explain how the gaps identified by Infantino and Bussani are gradually being filled, and to highlight additional findings that warrant greater attention as part of the ongoing developments in Central and Eastern Europe. References to the countries' experiences should be considered as references to the country-specific papers in this special issue.

[1] See the Introduction by Infantino and Bussani.

Section 2 highlights and compares the legal foundations for adopting algorithmic decisions by public bodies in the selected jurisdictions. Section 3 assesses the level of development in e-government and digital administration, as well as the current use of artificial intelligence in administrative activities. Section 4 examines the legal requirements for algorithmic decision-making. Section 5 analyses convergences and divergences in the law governing the algorithmic state in Central and Eastern Europe. Lastly, Section 6 summarises and illustrates the insights gained from this collective work, which opens up issues for discussion and suggests further areas for research.

2. The Legal Basis and Statutory Provisions

A first fundamental aspect to consider is the legal framework. Of course, the analysis carried out in this issue has also examined other legal formants beyond the statutory framework, allowing for a more accurate understanding of the legal reality as a whole. These additional legal formants, such as daily administrative activities and litigated cases, will be explored in the next section. Nevertheless, there can be no doubt that the fundamental basis for comparative analysis is the legal framework.

In this regard, it is useful to remind that national reporters were asked to indicate whether in their country there is a general legal basis for the use of algorithmic automation and/or artificial intelligence (AI) by public administration (including government bodies, agencies, local administrations, and specialised bodies). Conversely, national reporters were also invited to point out the presence of specific legal prohibitions that prevent public administration from relying on algorithmic automation or AI. In addition, national reporters were asked to assess whether the legal basis for the digitalisation process could be derived from pre-existing norms and simply incorporated into the previous framework by way of interpretation, or if to do so there was the need for new technologically-oriented rules. National reporters were also asked whether the legal basis for the digitalisation process, if any, is in their country established by a general act or a sector-specific piece of legislation. Moreover, national reporters were invited to express whether algorithmic codes in their countries are treated as administrative documents, either through the interpretation/application of general principles or through

reforms. This translates to asking whether, in their country, algorithmic codes are legally classified (e.g., as administrative documents) by interpreting existing laws or by reference to newly established rules.

The picture stemming out from the various national answers is complex and closely linked to the different stages of digitalisation.

Many countries have chosen to pursue the digitalisation of public administration by initially employing planning documents or government strategies. This is the case of Bulgaria, Croatia, Czech Republic, Poland, and Serbia[2]. In Bulgaria, for instance, although the topic is primarily included within the broader e-government framework for action, further momentum for its implementation is being generated by the approval of additional policy provisions.[3] In some other legal systems, such as Albania[4], the development of AI Strategies has led to the adoption of general or sector-specific legal regulations governing the use of such technologies by public bodies. At the same time, many of these countries (i.e., the Czech Republic, Croatia, Poland and Serbia) do not yet have a specific legal framework explicitly governing the use of AI in public administration[5]. From this perspective, it is worth mentioning that the Latvian government presented a proposal to parliament in October 2024 to amend the Law on Administrative Liability that would introduce – if approved – a new chapter on "Automated decision making"[6].

Focusing on administrative activity, the core procedural legislation for the entire public administration consists of national general administrative procedure acts, whose designation varies across different legal systems. These acts have been everywhere interpreted as applying also to digital administration issues; in some cases, the acts have been amended to accommodate such use.

For instance, countries such as Bulgaria, Romania and Serbia still lack explicit modifications to their General Administrative Procedure Acts[7]. By contrast, many other countries have made significant amendments to their general legislation on

[2] See the papers on Bulgaria, Croatia, Czech Republic, Poland, Serbia.
[3] See the paper on Bulgaria.
[4] See the paper on Albania.
[5] See the papers on the Czech Republic, Croatia, Poland and Serbia.
[6] See the paper on Latvia.
[7] See the papers on Bulgaria, Romania, Serbia.

administrative procedure to include AI; this is in particular the case for Albania, Croatia, Hungary, Latvia, Lithuania, and Turkey[8].

In Albania, the general code on administrative procedures serves as the main reference for public administrations also when acting for electronic service delivery. Additionally, a specific Act on Electronic Governance was enacted in 2023 to regulate citizen participation and enhance administrative accountability. Furthermore, other sector-specific acts are either in the process of approval or have recently come into force[9].

Croatia's General Administrative Procedure Act was amended in 2021 to accommodate automation in public administration. This amendment allowed decisions to be electronically signed by officials or authenticated with an electronic seal, enabling the use of algorithms and AI to assist in administrative matters. However, these tools are primarily used for procedures initiated *ex officio*, such as tax collection or other cases where no additional input from the affected party is required[10].

The Hungarian experience proves particularly relevant in this regard. As a first step, Hungary initially included the regulation of digital administration in the general Administrative Procedure Act, subsequently approved the so-called General Rules of Electronic Administration and Trust Services (GREATS, which were conceived as special legislation vis-à-vis the ordinary administrative procedural code), and finally approved the Digital State Act[11].

Latvia's Administrative Procedure Law permits automated decision-making but only in specific cases, such as traffic and tax-related offences. The law was amended to explicitly allow decisions to be made by automated systems without human intervention but only in instances where no discretion is required, thereby ensuring a predictable legal outcome[12].

Lithuania has gradually integrated automation into its legal framework. The Code of Administrative Offences has been amended several times since 2018 to include automated administrative orders, particularly in tax administration[13].

[8] See the papers on Albania, Croatia, Hungary, Latvia, Lithuania, Turkey.
[9] See the paper on Albania.
[10] See the paper on Croatia.
[11] See the paper on Hungary.
[12] See the paper on Latvia.
[13] See the paper on Lithuania.

Turkey has developed a robust AI governance ecosystem through the Digital Transformation Office (DTO) and the establishment of the TÜBİTAK Artificial Intelligence Institute. It is also preparing an AI Bill (2024), which will regulate AI usage in public administration[14].

Across the countries considered, the legal basis for AI and algorithmic automation in public administration varies significantly. Most countries are in the early stages of integrating AI into public administration; they possess strategies and policies, but practical implementation is limited and a comprehensive legal framework is lacking. The EU Regulation on Artificial Intelligence (so-called AI Act)[15] plays a fundamental role in shaping future AI governance, especially for EU Member States, while non-EU countries such as Serbia and Turkey aim to align themselves with it[16].

3. The Diffusion of the Use of Artificial Intelligence in Current Administrative Activity

To provide a broader and more comprehensive picture for our comparative analysis, it is essential to assess the extent to which public administration employs algorithmic automation and/or AI in its daily operations.

The use of technology in public administration looks like a well-established reality in many countries, while it is viewed as an ongoing process in others.

The definition of foundational concepts such as digital administrative acts, e-proceedings, and digital proceedings remains controversial in many countries. This may result from gaps in the available literature or from the fact that the concept has not been formally codified.

In almost every jurisdiction, the advent of the digital state represents a second stage in the introduction of forms of e-government. While the e-government experience typically begins with the creation of platforms, sandboxes, and means of information exchange, both between administrations and between

[14] See the paper on Turkey.
[15] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act).
[16] See the papers on Albania, Serbia and Turkey.

administrations and citizens, the digital state increasingly encroaches on individual spheres by delegating certain tasks to artificial intelligence.

The extent and pace of the transition from e-government to the digital state varies considerably from country to country.

In the majority of the twelve legal systems herein considered, public bodies are gradually adopting algorithmic automation in their daily operations. However, the degree of automation differs significantly. Some countries have made significant strides in integrating AI into public administration. For instance, Lithuania is highly advanced in the use of automation, as public bodies heavily rely on automated systems for tax administration, judicial processes, and administrative orders. The judicial system, in particular, has been digitalised to handle case management, and automation is also used for managing minor offences such as traffic violations[17]. Latvia is another country that employs automation extensively, especially in traffic management and tax collection. Automated systems are widely used for issuing traffic fines and managing tax-related issues, focusing on reducing human involvement in routine administrative tasks[18]. Turkey has integrated AI into various sectors, including traffic management, public relations (via chatbots), and public safety. The Digital Transformation Office (DTO) is responsible for overseeing AI deployment across these sectors, and there is significant momentum toward using automation in routine government operations[19]. Poland employs automation in sectors like waste management, traffic control, and smart city initiatives, leveraging AI to improve efficiency in traffic management, monitor public safety, and control waste disposal[20].

In other legal systems, the situation is quite different, with limited use of automation by public bodies in their daily practices. For instance, Serbia is in the early stages of adopting automation in public administration. While some automation is present in healthcare, tax management, and immigration, the extent of automation is limited in comparison with other countries. Public services, such as issuing permits, are beginning to be automated,

[17] See the paper on Lithuania.
[18] See the paper on Latvia.
[19] See the paper on Turkey.
[20] See the paper on Poland.

but the use of AI in daily operations remains minimal[21]. The same holds true for Albania, that has implemented automation in security and immigration control through the use of AI in border crossings and surveillance. It has built the e-Albania portal, which is the official gateway for public services. However, despite the adoption of the 2023 Act on Electronic Governance, public administration remains largely manual, and the use of algorithmic automation in routine decision-making is still in its nascent stages[22]. In Romania too, although some aspects of public procurement and transport have been digitalised, automation in routine administrative tasks remains limited. The lack of AI-specific regulations and a strong reliance on traditional methods mean that automation is used sparingly in public services[23].

Hence, while some countries are leading in the use of automation in their daily public administration practices, others are lagging behind, with limited integration of AI into their public administration systems. This division reflects the broader trend of more developed digital infrastructures enabling faster automation adoption, while countries with less developed digital ecosystems are slower to embrace AI-driven processes in public administration.

Moving to the sectors most affected by automation, it is clear that artificial intelligence has spread across both authoritative administrative functions – such as security, police, immigration, and tax management – and service provision – such as transportation, welfare, and health services. Most legal systems use automation for citizen e-identification and public procurement. It is interesting to note that the Polish consumer protection agency has developed an AI-powered tool called Arbuz, which determines the likelihood that a contractual clause might be abusive. This AI-based system performs a preliminary analysis of documents to identify provisions in standard contract terms that may be abusive, meaning they define the rights and obligations of consumers in a manner contrary to good morals and that grossly violate their interests. The recommendations generated by the algorithm could then be verified by a case handler, who would make the final decision on whether to deem a clause abusive[24].

[21] See the paper on Serbia.
[22] See the paper on Albania.
[23] See the paper on Romania.
[24] See the paper on Poland.

Lastly, in the countries selected for comparison, there is a limited number of specific cases where automated administrative decisions have been litigated. Latvia, Lithuania and Poland have seen some legal challenges regarding automated decisions[25]. These challenges often focus on data protection issues and the transparency of algorithmic decisions under the General Data Protection Regulation (so-called GDPR)[26]. For instance, decisions related to automated traffic fines or tax compliance have been challenged based on the argument that individuals were not given sufficient explanations for the automated decisions made by AI systems. Many other countries, such as Hungary, Serbia and Turkey[27], have not yet experienced significant litigation regarding algorithmic decisions, probably on account of the relatively recent introduction of AI in public administration and the lack of comprehensive legal frameworks. In conclusion, litigation concerning automated decisions has so far been limited but is expected to rise as public bodies increasingly come to rely on AI. Issues relating to privacy, data protection, transparency, and the right to appeal automated decisions will probably become areas of legal contention, especially as the GDPR continues to serve as a regulatory baseline in most countries.

4. Legal Requirements for Algorithmic Decision Making

When assessing the digital state, it is particularly important to focus on the applicable legal requirements, i.e., on the legal obligations associated with the use of AI by public administrations.

Of course, the significance of procedural requirements and safeguards for citizens is directly influenced by the form of administrative action involved and the stage of the procedure at which automation takes place. The more authoritarian an administration, the greater the need to focus on individual guarantees as shaped by administrative law. As discretionary

[25] See the papers on Latvia, Lithuania, Poland.
[26] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).
[27] See the papers on Hungary, Serbia, Turkey.

power increases, one may find refuge in traditional forms of administrative protection.

An in-depth look at the transition from e-government to digital administration brings us back to questions that are likely to be tackled very differently from country to country and open the floor for a deeper discussion on the role of procedural standards.

National reporters were asked to focus on some legal requirements for algorithmic decision-making that seem to be particularly important for safeguarding citizen's rights and upholding the rule of law: privacy and data protection, transparency, the right to access codes, the right to obtain explanations, compulsory human involvement, and the right to have remedies. All these requirements are designed, conceived of and regulated differently across jurisdictions, providing citizens with different levels of protection.

In all EU Member States, privacy requirements are strictly regulated by the GDPR. AI systems that process personal data must comply with GDPR Article 5, which ensures lawful, fair, and transparent data processing, purpose limitation, and data minimisation. Furthermore, Article 22 restricts decisions based solely on automated processing of personal data, requiring human intervention in important cases. Moreover, the GDPR exerts its effects beyond the European Union's borders. The so-called Brussels effect[28] and the aspiration of candidate states to become members has led other states, such as Albania[29], to adapt to European regulation on privacy requirements to be in line with the GDPR.

Transparency obligations are also a basic procedural requirement for administrative proceedings in most countries. How can transparency be guaranteed in automated administrative decisions? Here there is an even greater variance across the legal systems surveyed, both in terms of solutions and of levels of protection. Latvia has one of the most advanced frameworks for transparency in automated decision-making. The Latvian Administrative Procedure Law explicitly states that individuals must be informed when decisions are made by automated systems, and they must be given access to information explaining how these decisions were reached[30]. Lithuania too emphasizes transparency

[28] A. Bradford, *The Brussels Effect: How the European Union Rules the World* (2019).
[29] See the paper on Albania.
[30] See the paper on Latvia.

in its automated decision-making processes, especially in the field of judiciary and tax administration[31]. These two legal systems might be considered forerunners in transparency requirements among the countries included in this comparative analysis. Other countries have made efforts toward transparency in automated decision-making but lack fully developed AI-specific frameworks. For instance, the E-Government Act in Bulgaria incorporates transparency requirements for public administrative decisions. However, current regulations on AI-driven decision-making remain incomplete, with limited transparency and minimal public disclosure of AI and algorithmic tools in the public sector. The new Bulgarian AI Act, currently under adoption, might well improve transparency in public administration[32]. Meanwhile, other countries, such as Hungary and Serbia, are in the early stages of establishing transparency frameworks for AI-driven decision-making[33].

The right to have access to codes proves to be the main field of (negative) convergence of the twelve countries surveyed, since in none of them there is currently a legal provision explicitly granting individuals the right to access the algorithmic code used in the automated decisions by public administrations. However, in many legal systems, like in Croatia, Latvia, Lithuania, and Poland[34], citizens have the right to be informed about the logic behind automated decisions and the explanations for decisions based on automated processing. In all EU Member States, the GDPR ensures that individuals have a right to an explanation about the logic behind decisions involving their personal data. Yet, direct access to the algorithmic code itself is not granted anywhere.

As regards the duty of human oversight, across all EU Member States GDPR Article 22 plays a crucial role in ensuring that citizens have the right to request human intervention in automated decision-making processes involving their personal data. This means that automated decisions with legal effects or similarly significant impacts are always subject to potential human oversight in all EU countries. Beyond this, countries such as Latvia, Lithuania, and Poland have well-developed national frameworks imposing human involvement in automated decisions, especially in areas

[31] See the paper on Lithuania.
[32] See the paper on Bulgaria.
[33] See the papers on Hungary and Serbia.
[34] See the papers on Croatia, Latvia, Lithuania, Poland.

such as taxation and judicial services[35]. In particular, Latvia's Administrative Procedure Law explicitly requires human review in complex cases. While human oversight is not required with regard to the automated management of traffic offences, the rationale for this absence is that such offences are generally clear and can be easily captured by technology without the need for human judgment or interpretation[36]. Non-EU countries do not yet have specific legal provisions to mandate human involvement in automated decisions[37]. These countries are expected to expand their frameworks as they are about to align with the GDPR and the AI Act.

Lastly, in terms of the right to seek remedies, some countries, such as Croatia, Latvia, Lithuania, and Slovenia, have robust review frameworks, with rules that clearly outline how citizens can challenge automated decisions and request a review, both in general and in specific areas, such as taxation and traffic management[38]. Non-EU countries are currently at various stages of adopting or harmonising with the EU standards mentioned above. Although these countries currently provide mechanisms for reviewing administrative decisions in general, they are expected to expand or formalise review rights specific to automated decisions as AI-related regulations evolve[39].

5. Convergences and Divergences

Four areas of convergence can be identified, three of which are general, and one more sector-specific.

A first point of convergence is that the selected legal systems all recognise that automation can create substantial benefits in terms of efficiency as algorithms can deliver faster decisions and reduce subjective bias, promoting objectivity. There is also widespread awareness of the significant risks that automation may pose. Most countries face challenges in ensuring transparency and accountability in AI-driven decisions. AI also introduces opacity (the so-called "black box" problem), which complicates the process of explaining or challenging automated decisions.

[35] See the papers on Latvia, Lithuania, Poland.
[36] See the paper on Latvia.
[37] See the papers on Albania, Serbia and Turkey.
[38] See the papers on Croatia, Latvia, Lithuania and Slovenia.
[39] See the papers on Albania, Serbia and Turkey.

A second important common feature is the widespread and growing use of automated decision-making by numerous public bodies, including central and local authorities, agencies, and independent bodies. This is important not only in itself but also because it highlights the central role of public entities in the development and regulation of AI, confirming one of the main hypotheses underpinning this research.

A third general commonality is that all the legal systems considered have established procedural requirements for algorithmic decisions to varying extents, mainly concerning privacy obligations and data protection, transparency, the right to explanations, compulsory human involvement, and the right to seek remedies. In contrast, no country provides for the right to access codes.

Fourthly, all legal systems make use of automation for e-identification and interactions with citizens. In nearly all cases, algorithms are widely used in areas such as tax matters, traffic management, and the issuance of certificates and licences.

Needless to say, a greater degree of uniformity across countries is anticipated with the implementation of the EU AI Act, affecting both Member States and potential candidate countries. This expectation holds even for countries that initially responded to the AI Act with criticism, arguing that the Act had insufficiently addressed issues of transparency, fairness and, more broadly, the protection of the rights of those affected by AI-driven processes in administrative activities. Another potential means of harmonisation with a view to common, or simply higher, procedural standards of protection, is represented by the Framework Convention on Artificial Intelligence and Human Rights, Democracy, and the Rule of Law, adopted in September 2024 by the Council of Europe[40].

Alongside the trends of convergence described above, there are also many divergences that can be identified in terms of normative, procedural, and institutional aspects.

First of all, the twelve countries analysed are all at different stages of implementing and regulating AI and algorithmic automation in public administration. Countries such as Latvia and

[40] Council of Europe, "Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law" (2024), at https://www.coe.int/en/web/artificial-intelligence/the-framework-convention-on-artificial-intelligence, visited 15 September 2024.

Lithuania exhibit high digital maturity, with advanced digital public services[41], while others, such as Albania, Romania and Serbia, are still building their digital infrastructures, which affects the pace of AI adoption[42].

From the normative perspective, some countries have adopted statutory rules to allow and regulate the use of automated decisions, while others rely solely on the absence of a formal prohibition. In certain cases (such as Croatia and Latvia), the national General Administrative Procedure Acts were amended to introduce specific provisions or otherwise take into account the possibility of automated decisions, but in many other countries no legislative adjustments have been made[43].

From the procedural point of view, the protections available to affected individuals vary widely in both substance and level. States currently struggle to identify mechanisms that are both normatively and technologically adequate to ensure the transparency and explicability of automated decisions, to enforce people's right to explanations, and to provide for judicial review and effective remedies.

From the organisational and institutional standpoint, several countries have established new institutions or strengthened existing ones to guide AI development, such as the Albanian National Agency for Information Society (NAIS), the Romanian Digitisation Authority (RDA) and the Turkish Digital Transformation Office (DTO)[44]. Many others, however, have not yet taken similar steps.

6. Unresolved Issues and Further Research Perspectives

Considering the numerous challenges raised by the digitalisation process, our analysis suggests that, beyond the pursuit of more efficiency, other factors may also influence legal systems' response to digitalisation. A first factor seems to be the extent and pace of technological progress in the country and the breadth of its diffusion; the more technologically advanced the country, the more likely it is that its public administration will be turning into a digital state. A second factor that is clearly relevant

[41] See the papers on Latvia and Lithuania.
[42] See the papers on Albania, Romania and Serbia.
[43] See the papers on Croatia and Latvia.
[44] See the papers on Albania, Romania and Turkey.

in the European region is the EU membership status or the candidacy aspirations of non-EU states, which drives some legal systems to align with growing supranational digitalisation strategies. A third factor is the need to develop a strategy to prevent and fight emerging forms of cyberattacks. Lastly, a fourth factor that might matter is the stability of the political system. For instance, in some cases digitalisation has been fostered by huge changes in forms of government, as it has happened with the recent transition to a presidential system in Turkey.

It should be also noted that everywhere the above developments seem to be driven by governments, the administration itself, and, to a much less extent, national legislatures. Most of the national reporters involved in this issue note that the scholarly debate on the digital state in their country is somewhat limited, not in terms of quality but in terms of a substantial lack of interest in issues herein explored. In addition, almost all of the national reporters point to a lack of decided cases against the digital administration, which means that there is for the time being a very limited case-law on the topic. In some legal systems, no case at all has been discussed. This lack of case law appears to be the key factor for future research directions. Considering the importance and centrality of AI use by public administration, the wide and ever-increasing array of the sectors in which it can be used, and the human rights implications involved in automated decision-making, there will certainly be a growing number of court cases concerning automated decisions, and with them an increasing case law on the topic that will warrant future analysis.