DIGITALIZATION AND PUBLIC SERVICES: CRITICAL NOTES CONCERNING EMERGING WAYS OF ADMINISTRATING

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Abstract

The aim of the present work is to propose a legal perspective of analysis for issues of relationships that are relevant in field of digitalization and delivery of public services, in relation to services quality, protection of citizens and businesses, and risks of destructuring a system, which in Italian law, has been marked by an enduring regulatory instability.

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Modernizing and innovating public administrations and ensuring that structures remain in place are issues that, although they have been on legislators' agendas uninterruptedly for years, have not been adequately addressed, if one of aims of governments, and of Italian one in particular, is always public administration, which has been guilty of the same wrongdoings for 40 years[1].

[1] There is an extensive bibliography on the subject, and in the knowledge that it is not possible to list all studies conducted, the following are cited, C. Acocella, *Innovazione tecnologica e innovazione amministrativa. L'automazione delle decisioni nel quadro della riforma della p.a.*, in F. Liguori (ed.), *Il problema amministrativo. Aspetti di una trasformazione tentata* (2021) 185-200; about the necessary response to complexity through modernization, cf. C. Barbati, *La decisione pubblica al cospetto della complessità: il cambiamento necessario*, 1 Dir. pubbl. 15-26 (2021); cf. C. Pinelli, *Modernizzazione amministrativa, principio di legalità, interpretazione costituzionale*, 1 Dir. pubbl. 85-87 (2001); recently, after nearly twenty years, comes to similar conclusions F. Cortese, *Costituzione e nuovi principi del diritto amministrativo*, 2 Dir. amm. 329-334 (2020); A. Lazzaro, *Informazione e comunicazione digitale nel processo di modernizzazione della pubblica amministrazione*, 2 Riv. dir. med. 1-12 (2018); innovation must be read in a micro dimension, of many integrations that

Present survey would have an ambitious objective, and it is hoped that its premises will be maintained, since it will be necessary to go through different areas of public and administrative law, within principal prism of connection between digitalization and public services[2], the red thread of the discussion, with all (or almost all) applicative consequences that this entails.

The theme of digitalization of public administration, although this term is rather vague and all-encompassing, has taken

follow each other, often without an organic design, as observed by M. Clarich, *Istituzioni, nuove tecnologie, sviluppo economico*, 1 Dir. pubbl. 75, 78 (2017); with a view to the dutifulness of the objectives and the blunt weapons to achieve them in the hands of administrations, see S. Tuccillo, *Contributo allo studio della funzione amministrativa come dovere* (2016) 301-303; according to M. Cammelli, *Amministrazione e mondo nuovo: medici, cure, riforme*, 1 Dir. amm. 9-12 (2016), legal systems have three ways of reacting to administrative overload, namely reducing functions, maintaining functions by relying on private interests, and rationalizing expenditure and procedures; M. Bombardelli, *Semplificazione normativa e complessità del diritto amministrativo*, 3 Dir. pubbl. 985 (2015); M. Savino, *Le riforme amministrative: le parabole della modernizzazione dello Stato*, 2 Riv. trim. dir. pubbl. 641-690 (2015); see F. Donati, *Democrazia, pluralismo delle fonti di informazione e rivoluzione digitale*, 11 Federalismi 1-4 (2013); L. Torchia (ed.) *Il sistema amministrativo italiano* (2009) 41-50, reports, in an emblematic sense, of the extremely slow modernization; S. Cassese, *Il mondo nuovo del diritto. Un giurista e il suo tempo* (2008) 17-21; with reference to foreign legal literature, see, *ex multis*, J. Gill et al., *Public administration research and practice: a methodological manifesto*, 3-4 Tex. A&M Rev. 111-119 (1999); cf. L.D. Terry, Administrative leadership, neo-mangerialism, and the public management movement, 58 Publ. Adm. Rev. 194-200 (1998); F. Stewart, *The discontent of legalism: interest group relations in administrative regulation*, 1985 Wis. L. Rev. 655-671 (1995), in the perspective offered by administrative complexity, which cannot be ignored as a parameter, see E. Morin, *Le vie della complessità*, in G. Bocchi, M. Ceruti (eds.), *La sfida della complessità* (1986) 49-51.

[2] For an appreciation of the latest critical developments and the extent to which the topic is still of central importance, *ex multis*, cf. A. Sandulli, G. Piperata, L. Saltari, *Il ritorno del servizio alla comunità come munus publicum*, 1 Munus v-x (2020); G. Napolitano, A. Perretto (eds.), *La regolazione efficiente dei servizi pubblici locali* (2017) 265-269; with reference to precarious balances produced and possible solutions, cf. M. Calcagnile, *Monopoli e privative nei servizi di interesse economico generale*, 5 Giorn. dir. amm. 634-644 (2017); see A. Tortara, *I servizi pubblici in Italia ed in Europa* (2017) 111-136; from the perspective of the protection of subjective legal positions, cf. A. Moliterni, *Il giudice dei servizi pubblici e l''araba fenice' del criterio dell'interesse pubblico*, 2 Giorn. dir. amm 148-159 (2014); in an classic sense but unsurpassed in specific approaches, is allowed a reference to the work written by U. Pototschnig, *I pubblici servizi* (1964) 141-155.

on central importance in debate[3], and not only among scholars, and, to some extent, these consequences in legal terms have been taken to their extreme with rise of pandemic and public policies aimed at implementing a path to recovery, often with reference to digitalization[4].

The real risk is that of considering digitalization processes as a panacea for all innumerable problems that afflict public administration, even in terms of the view, investigated in this analysis, of an improvement in delivery of public services[5].

[3] The digitalization *tout court* solution does not entail the saving grace that is often inherent in reforms, but it does require courage to administer, as noted by G.D. Comporti, *Il coraggio di amministrare*, in Vv. Aa. (eds.), *Scritti per Franco Gaetano Scoca* (vol. 2, 2020) 1101-1155, 1161.

[4] The reference is made to Decree Law 16 July 2020, no. 76, concerning simplifications, which foresees an extensive use of digitalization, as one of preconditions for economic recovery after the pandemic. Concerning the relationship between simplification and digitalization in general terms, see A.G. Orofino, *La semplificazione digitale*, 1 Dir. econ. 87 (2019), increasingly, reference is made to the role of digitalization as a means of simplifying administrative procedures. However, in order for digital transformation of public administrations to bring hoped-for results, it must be carried out with caution and great awareness of problems involved, whereas such caution and awareness seem to be lacking in recent legislation; a reference may also be made to F. Liguori et al., *Liberalizzare, semlificare, dialogare. Dall'amministrazione come ostacolo all'amministrazione come alleata*, in A. Castaldo (ed.), *Quaderni CUR* (2021) 99-108; generally agree with reflections made by G. Colombini, *I decreti semplificazione e rilancio alla luce dei principi generali di contabilità pubblica ovvero dei falsari di parole*, 8 Federalismi 21-34 (2021); R. Spagnuolo Vigorita, *Semplificazione e sostituzione della legge 'Madia' al decreto legge n. 76/2020. Il ruolo dell'amministrazione nelle politiche di sviluppo economico e sociale*, 2 Munus 309-345 (2020); share considerations made by F. Pinto, *Il mito della corruzione. La realtà della malamministrazione* (2018) 11-45; the administrative problem is first and foremost a cultural and skills problem, M. Ramajoli, *Quale cultura per l'amministrazione pubblica?*, 2 Giorn. dir. amm. 187-192 (2017); administration as an obstacle, in its functions including digital and service delivery, F. Fracchia, *L'amministrazione come ostacolo*, 2 Dir. econ. 357-393 (2013).

[5] This issue obviously intercepts a proper division of responsibilities between the parties involved, for an analysis of which see P. Lazzara, *Responsabilità pubbliche e private nel sistema dei servizi di interesse economico generale*, 3 Dir. amm. 531-540 (2020); cf. D. Sorace, *Diritto delle amministrazioni pubbliche* (9th ed., 2018) 167-179; M. Delsignore, *I servizi sociali nella crisi economica*, 3 Dir. amm. 587, 594-603 (2018); with an analysis of different responsibilities linked to different forms of management, see M. Renna, S. Vaccari, *I servizi pubblici locali di interesse economico generale. Brevi riflessioni in tema di nozione, assunzione e forme di gestione a margine di un recente schema di testo unico*, in G. Sala, G. Sciullo (eds.), *Procedimen-*

It seems appropriate, starting at this point, to restrict the scope of investigation in relation to a subject that presents innumerable issues of interest for administrative law and has been subject of studies, including authoritative ones.

The aim of this work is not to analyze - among many topics of interest - controversial use of AI[6], algorithms in context of administrative activity generically understood, but to verify maintenance of articulated model of public service delivery in Italian legal framework according to use of data[7], interconnections and different e-government tools[8].

to e servizi pubblici nel diritto amministrativo in trasformazione (2017) 177-211; cf. C. Acocella, *Considerazioni sul valore della concorrenza (e sulla portata atecnica della liberalizzazione) nel settore degli appalti pubblici*, in F. Liguori, C. Acocella (eds.), *Contratti della pubblica amministrazione e politiche di liberalizzazione* (2014) 89-94; see F. Liguori, *I modelli organizzativi e gestionali dei servizi pubblici metropolitani: prime considerazioni*, 1 Munus 445-466 (2014); see, in an authoritative way, F. Merusi, *The troubled life of competition in local public services*, 1 It. J. Pub. L. 38-50 (2012); F. Donati, E. Bruti Liberati (eds.), *La regolazione dei servizi di interesse economico generale* (2009) 97-101, 105; R. Perdersini, *La riforma dei servizi pubblici: oltre le istituzioni in Stato e mercato* (2009) 95; an interesting perspective, precisely from the point of view of the investigation conducted, is provided by reading, in a classical key of this theme, by B. Sordi, *Servizi pubblici e concorrenza: su alcune fibrillazioni tra diritto comunitario e tradizione continentale*, 2 Quad. fior. 577-603 (2002).

[6] The topic has been dealt with comprehensively, references are limited to the most recent work, including G. Maira, *Intelligenza artificiale e intelligenza umana*, 7 Federalismi v-xvii (2021); see P. Otranto, *Riflessioni in tema di decisione amministrativa, intelligenza artificiale e legalità*, 7 Federalismi 187-200 (2021); R. Conti, *L'algoritmo e la nuova stagione del costituzionalismo digitale: quali le sfide per il giurista (teorico e pratico)?*, 4 Giustizia insieme 1-7 (2021); S. Del Gatto, *Potere algoritmico, digital welfare e garanzie per gli amministrati. I nodi ancora da sciogliere*, 6 Riv. it. dir. pubbl. com. 829-840 (2020); A. Di Martino, *L'amministrazione per algoritmi ed i pericoli del cambiamento in atto*, 3 Dir. econ. 599-633 (2020).

[7] As noted in the classical sense, but the theme must also be confirmed with regard to public services that are an expression of exercise of a public function, M.S. Giannini, *Certezza pubblica* (encyclopedic voice), VI Enc. dir. 269 (1960), there is a need to move from a system of sufficiently secured data to one of absolutely secured data.

[8] Recently, in a shared sense, see S. Civitarese Matteucci, *The rise of technological administration and the ragged route towards a digital administrative law*, in D. Sorace, L. Ferrara, I. Piazza (eds.), *The changing administrative law of an EU member state. The Italian case* (2020) 127-146, for whom the digital transition must be an opportunity for administrations and not yet another obstacle between the apparatus and citizens; cf. M.G. Losano, *La lunga marcia dell'informatica nelle istituzioni italiane*, in R. Cavallo Perin, D.U. Galetta (eds.), *Il diritto dell'amministrazione*

The approach to this survey bears witness to need to report on a number of critical issues concerning regulation[9] of artificial intelligence in EU law and what main criticisms are. Far from having received an organic arrangement, this topic is affected by different approaches[10].

In this direction, the EU can become a global standard-setter in the area of artificial intelligence ethics. Common EU legislative action on ethical aspects of AI could boost the internal market and establish an important strategic advantage. While numerous public and private actors around the globe have produced ethical guidelines in this field, there is currently no comprehensive

pubblica digitale (2020) iv-viii; F. Notari, *Il percorso della digitalizzazione delle amministrazioni pubbliche: ambiti normativi mobili e nuovi modelli di governance*, 1 Giorn. dir. amm. 21-25 (2020); see P. Clarizia, *La digitalizzazione della pubblica amministrazione*, 6 Giorn. dir. amm. 768-781 (2020); E. Carloni, *Algoritmi su carta. Politiche di digitalizzazione e trasformazione digitale delle amministrazioni*, 2 Dir. pubbl. 365, 370-375 (2019); J.-B. Auby, *Il diritto amministrativo di fronte alle sfide digitali*, 3-4 Ist. fed. 619-640 (2019); E. Carloni, *Digitalizzazione pubblica e differenziazione regionale*, 6 Giorn. dir. amm. 698 (2018); F. Martines, *La digitalizzatone della pubblica amministrazione*, 2 Riv. dir. med. 4-6 (2018); B. Carotti, *La digitalizzazione*, in B.G. Mattarella, E. D'Alterio (eds.), *La riforma della pubblica amministrazione. Commento alla legge 124/2015 (Madia) e ai decreti attuativi* (2017) 73-77; B. Carotti, *L'amministrazione digitale: le sfide culturali e le politiche del nuovo Codice*, 1 Giorn. dir. amm. 15 (2017); L. Torchia, S. Civitarese Matteucci, *La tecnificazione*, in L. Torchia, S. Civitarese Matteucci (eds.), *La tecnificazione della pubblica amministrazione*, in L. Ferrara, D. Sorace (eds.), *A 150 anni dall'unificazione amministrativa italiana. Studi* (vol. 4, 2016) 7-14; G. Duni, *Anniversari dell'informatica amministrativa. Origini, evoluzione e prospettive*, 2-3 Diritto e processo amministrativo 615-633 (2015); for a historical reconstruction of the early phase of the notion of e-government, see F. Bassanini, *Twenty years of administrative reforms in Italy*, 3 Rev. Econ. Cond. Italy 369, 371 (2009); for an analysis of paths of digitalization of Italian public administration, a topic not analyzed in detail in this survey, see, as bibliographical references G. Duni, *Amministrazione digitale* (encyclopedic voice), 1 Enc. dir. Ann. 13, 18 (2007); on data interconnection profiles, in a broader but still market-related perspective, cf. R.V. Sabett, *International harmonization in elecronic commerce and electronic data interchange: a proposed first step toward signing on the digital dotted line*, 46 Am. U. L. Rev. 511-536 (1996).

[9] On this subject, for all, without necessary references to EU law, please refer to M.U. Scherer, *Regulating artificial intelligence systems: risks, challanges, competencies, and strategies*, 29 Harv. J. L. Tech 354-389 (2016).

[10] European Commission, *Laying down harmonised rules on artificial intelligence and amending certain Union legislative acts*, COM (2021) 206 final, available at www.digital-strategy.ec.europa.eu (2021), a totally new scenario is emerging, involving stakeholders, an ethical plan for the use of data and a new European vision on the subject.

legal framework. The EU can profit from the absence of a competing global governance model and gain full 'first mover' advantages[11].

Current systems of fundamental values and public regulation are based on the underlying assumption that action directly or indirectly triggered and caused by a human is the main source of danger. Technology, from its basic to its increasingly sophisticated applications has always been a part of human activity and public co-existence. Hence, for example, existing regulatory provisions in all European legal systems that aim to protect society and impose liability on individuals who are engaged in particularly dangerous activities. The main aim and the challenge of the framework of ethical aspects of AI is to adapt or complement the existing system of rules so that those rules provide clear *ex-ante*, dynamic and forward-looking guidance for development and application of AI that adheres to the ethical principles and values of a given society.

In highly competitive global AI landscape, fragmented EU action on the ethics of AI could essentially mean losing a global competitive advantage and building obstacles to the cross-border movement of goods and services in internal market. *Ex-post* regulatory efforts to bring joint standards for EU internal market could potentially have high political and economic costs that could be

[11] European Parliament, *European framework on ethical aspects of artificial intelligence, robotics and related technologies*, (EPRS, European Parlaiment Research Service), avaiable at www.europarl.europa.eu (2020); with reference to the need to shape public contracts and achieve a strategic tool to develop a cooperative model between economic operators and public administrations, with the sole aim of timely implementation and efficient management of public contracts and works see G.M. Racca, *La modellazione digitale per l'integrità, l'efficienza e l'innovazione nei contratti pubblici*, 3 Ist. fed. 740-744 (2019), by adopting smart contracts, it is possible to overcome opportunistic behaviour on the part of economic operators by providing appropriate incentives for cooperation in the public interest through the transparency and traceability of all planned activities; for a doctrinal reading in Italian law, see L. Attias, G. Scorza, *La consapevolezza digitale al servizio dell'etica*, 6 Dir. inf. 1191-1197 (2019); on the subject, in general terms, for a notable contribution to the debate on the need for a European legal regime, cf. G. della Cananea, *Le 'Model rules' come esempio di codificazione innovativa*, 2 Riv. it. dir. pubbl. com. 333-346 (2018); in traditional terms on this debate, refer to work by G. Lucatello, *Etica e tecnica nell'esperienza di un giurista*, 1 Dir. soc. 535-541 (1980), with reference to the necessary intersections between technique, law, politics and ethics.

avoided by taking *ex-ante* joint regulatory action at EU level. The nature of AI technologies, AI market structure and amount of investments necessary for the research, development and uptake of those technologies indicate that efforts and regulatory actions of individual Member States would be unlikely to achieve the same benefits as joint EU action owing to the scale of their impact.

In this context, from European point of view, but not only, extremely articulated, one of fields of administrative action that can take advantage from benefits that are inherent in a proper compliance with principles of a fully interconnected public administration is undoubtedly the area of public services[12], and more

[12] For a preliminary reflection on public services provided in a digital manner, see Cons. St., Sec. V, 15 March 2019, no. 1709, on the award of the services necessary for the drafting of the preliminary project for the redevelopment of the public lighting systems of the city of Bari in a smart perspective; on the subject see also Cons. St., Sec. V, 26 October 2018, no. 6690, 11 Foro amm. 1938 (2018), a dispute over the supply, installation and maintenance of a system for the active monitoring of roadside parking spaces reserved for the disabled and for the loading and unloading of goods on the basis of a smart parking system; Cons. St., Sec. V, 17 September 2018, no. 5422, on the dispute over the supply of smart trains in stations that allow the necessary functions of on-board systems for passengers even when the engines are switched off; on the incorrect use of a project financing procedure for the installation of artificial pillars for the development of the smart city, see T.A.R. Liguria, Genova, Sec. II, 3 July 2018, no. 593; on this subject, see the interesting development offered by A. Somma, *L'Europa tra momento hamiltoniano e momento Polanyi*, 1 Nomos 2-5 (2021); in relation to public expenditure profiles and possible organizational moments, cf. A. Maltoni, *Investimenti e strumenti di investimento pubblici per la smart city*, in A. Maltoni, A. Venuri (eds.), *Smart City. L'evoluzione di un'idea* (2020) 455-480; cf. the approach offered, also in dialectical terms for the realization of legal profiles, to this subject by S. Civitarese Matteucci, *Social rights, social market economy and the European social model: tracing conceptual boundaries*, in D. Ferri, F. Cortese (eds.), *The EU Social Market Economy and the Law* (2019) 51-66; with a focus on cohesion, see S. Cassese, *Dallo sviluppo alla coesione. Storia e disciplina vigente dell'intervento pubblico per le aree insufficientemente sviluppate*, 2 Riv. trim. dir. pubbl. 579 (2018), the digitalization of administrative action, particularly in the area of public services to be implemented through cohesion policies, should disregard the territorial dimension but be oriented towards a systemic approach; cf. G. Avanzini, *Decisioni amministrative e algoritmi informatici: predeterminazione, analisi predittiva e nuove forme di intellegibilità* (2019) 71-74, concerning area of public services, exploitation of big data and interconnected administrations can lead to better cost management. In this sense, smart grids use data analysis to modulate public service according to the real needs of users, encouraging forms of self-production; on the issue of smart grids, see F. Giglioni, *La sfida della regolazione pubblica. Il caso delle smart grid*, 3 Munus 465, 468 (2013);

generally on the subject of the relationship between globalization and free market[13].

Obviously, it is not possible here to give an exhaustive account of two directly related issues, i.e. digitalization and public services, since it is precisely the latter issue that continues to arouse interest among scholars[14], albeit with fluctuating trends over last years.

Idea of a fully interconnected administration, with continuous exchange and re-use of data, offers certain advantages (but as many risks)[15] for the provision of services to community[16] (regard-

on the subject, in relation to ICT, market and social rights, please refer to G. De Minico, *Accesso a Internet tra mercato e diritti sociali nell'ordinamento europeo e nazionale*, 4 Federalismi 6 (2018) (Focus, Social rights, State and European legislation), access to the Internet and digital markets is a cross border between the public service provider and the end user; cf., also, R.V. Loo, *Digital market perfection*, 5 Mich. L. Rev. 815-884 (2019).

[13] Cf., in general terms, A. Poggi, Oltre la globalizzazione. Il bisogno di uguaglianza (2020) 14-24; G. Silvestri, *Costituzionalismo e crisi dello Stato-Nazione. Le garanzie possibili nello spazio globalizzato*, 4 Riv trim. dir. pubbl. 905-910 (2013); M. Antonioli, *Enti pubblici e strumenti finanziari: i nuovi confini della finanza globale*, 1 Dir. econ. 19 (2011); on the subject of the necessary harmonisation of markets and their legal regime, S. Cassese, *Il diritto amministrativo globale: una introduzione*, 2 Riv. trim. dir. pubbl. 331, 347 (2005), who underlines relevance and importance of joint action, including at administrative level.

[14] The reference is to work draft by M. Dugato, *La crisi del concetto di servizio pubblico locale tra apparenza e realtà*, 3 Dir. amm. 510, 521-523 (2020), who dwells on classic profiles of the topic.

[15] On this subject, cf. S. Screpanti, *Big Data, tecnologia e intelligenza artificiale*, in F. Bassanini, G. Napolitano, L. Torchia (eds.), *Lo Stato promotore. Come cambia l'intervento pubblico nell'economia* (2021) 59-63; cf. A. Police, *Nuove idee per sfide inattese*, 2 Munus v-vii (2020); F. Costantino, *Rischi e opportunità del ricorso delle amministrazioni ai Big Data*, 1 Dir. pubbl. 43 (2019), Big Data can be acquired by the administration *ex lege*, *ex officio* and on impulse of citizens and the ability to predict decisions (which in terms of public services) is clearly the most advanced frontier of the use of Big Data, and is an activity that presents enormous opportunities, and at the same time risks, even significant; A. Perrucci, *Dai Big Data all'ecosistema digitale. Dinamiche tecnologiche e di mercato e ruolo delle politiche pubbliche*, 1 An. giur. econ. 68, 78, 85 (2019); M. Orefice, *I 'Big Data': regole e concorrenza*, 4 Pol. dir. 697 (2016); U. Fantigrossi, *I dati pubblici tra Stato e mercato*, 2 Amministrare 291 (2007).

[16] In other respects, it shares concerns expressed by P. Piras, *Comunicazione e innovazione nell'amministrazione gattopardo. I social media per un nuovo rapporto cittadino-pa; nulla di fatto?*, 1 Dir. econ. 241-255, 260 (2020).

less of who provides them[17], in fact this survey focuses only on the service delivery phase).

With regard more typically to rights of users in their relations with the administration through digital tools and the network, it is evident that these do not live only in a local dimension. The 'smart' and local characterization of these rights is part of a broader concept of digital relations with administrations, and this is why the issue flows into the qualitatively different one of 'digital citizenship[18]'.

Digital citizenship entails a new way of understanding relations between administrations and citizens in a context of broader recognition of rights, albeit without an explicit constitutional anchorage, but these take shape only through the right to enjoy a first nucleus of digital services, founding relationship between administration and citizens.

Operational prerequisite for all this - although it seems trivial to underline it but, in the Italian context, the issue is far from being resolved - is a real right of access to the network, without which the whole theoretical framework would fail[19].

In context of public service provision, the assumption of the right of access to Internet[20] becomes a minimum prerequisite for

[17] Cf. A. Maltoni, *Organizzazioni pubbliche, organizzazioni private ed esercizio di funzioni amministrative. Modifiche eteroimposte all'assetto organizzativo di enti privati per la salvaguardia di interessi pubblici essenziali*, in Vv. Aa. (eds.), *Scritti per Franco Gaetano Scoca* (vol. 4, 2020) 3257-3276.

[18] See M. Caporale, *Dalle smart cities alla cittadinanza digitale*, 2 Federalismi 30-43 (2020); M.T. De Tullio, *The boundaries of democratic community in a Free Trade Order. The Case of the Internet Law*, 1 Nomos 1-20 (2020); towards a digital third sector, as noted critically by V. Berlingò, *Verso un Terzo settore digitale. Nuove prospettive di ricerca sui rapporti tra media civici e pubblica amministrazione*, 2 Munus 667-690, 701 (2019), on the obligation to make precise provision for adequate infrastructure to work towards this seemingly certain drift; see, in critical terms, P. Marsocci, *Cittadinanza digitale e potenziamento della partecipazione politica attraverso il web: un mito così recente già da sfatare*, 1 Rivista AIC 1-6 (2015).

[19] From the point of view of the rights to be guaranteed, from a general theoretical viewpoint, see S. Sica, V. Zeno-Zencovich, *Legislazione, giurisprudenza e dottrina nel diritto dell'Internet*, 3 Dir. inf. 377-380 (2010), who makes a reflection on role of Courts in this respect that remains fundamental; see, in general terms, also, A. Pinzani, *Un diritto a Internet. Il problema della creazione di un'opinione pubblica mondiale e di nuovi diritti umani per il XXI secolo*, 1 Iride 143-158 (1998).

[20] M.R. Allegri, *Il diritto di accesso a Internet: profili costituzionali*, 1 Riv. dir. med. 57-80 (2021), the impossibility of accessing Internet connectivity services produces, therefore, damage to the person represented in terms of loss of oppor-

guaranteeing equality of access to the service, a logical and indefectible link is created between these two moments. The risk, in the absence of a digital citizenship right, is a further distancing of citizen and administration, a sort of impassable wall, worse than in past.

Using new technologies in public services sector is not only a new and extraordinary technical support to performing public tasks, but has triggered a profound transformation within *modus operandi* of public services sector. Online services can be considered as an example of a new and particular way in which public administration operates, and undoubtedly raises many relevant legal issues[21].

tunities for inclusion, so much so that some years ago the courts of merit explicitly spoke of existential damage caused by the digital divide. The more technology advances, the more the consequences of the digital divide produce damage that is difficult to recover; cf. also G. D'Ippolito, *Il diritto di accesso a Internet in Italia. Dal 21 (bis) al 34-bis*, 1 Riv. dir. med. 81-102 (2021), the right of access to Internet is made up of a series of rights and a series of obligations which are also inherent in the public entity which has to take charge of them; M. Nisticò, P. Passaglia (eds.), *Internet e Costituzione* (2014) 12-22; cf. T.E. Frosini, *Access to Internet as a fundamental right*, 2 It. J. Pub. L. 225-232 (2013), the informatic freedom is qualified as a new right, resulted from the evolution of technological society, which shows a new aspect of the wellestablished idea of personal liberty. This particular right has become a claim of liberty in the active sense, perceived as the freedom to make use of computer in order to provide and obtain information of any kind or as the right to join the digital society and communicate to whoever; F. Borgia, *Riflessioni sull'accesso a Internet come diritto umano*, 4 Com. int. 395-403 (2010).

[21] Please refer to A. Masucci, *Digitalizzazione delll'amministrazione e servizi pubblici on line. Lineamenti del disegno normativo*, 1 Dir. pubbl. 119 (2019), in the context of a strategy to revive technology diffusion information was pointed out that networked public services can be used for helping to reduce administrative burdens, improving quality services in the public sector, to increase the efficiency of the internal procedure of the public institution, reduce administrative costs and citizens. On this issue, the Author highlights the positive effects of the digitization of public services, highlighted by the program '*Eu.e.Government-Actionplan 2016-2020*', from a social and economic point of view. Digitized public services can help to promote the completion of the internal market by making it possible to access public services throughout the EU, by simplifying relations between administrative bodies in the various EU countries, by promoting competition between companies that transcends national borders and by strengthening confidence in the internal market; L. Ammanati, *Regolare o non-regolare, ovvero l'economia digitale fra 'Scilla e Cariddi'*, in L. Ammanati, R.C. Panico (eds.), *I servizi pubblici: vecchi problemi e nuove regole* (2018) 101-116; G. Cam-

A preliminary question to be addressed is of a defining nature, on what is meant by online public services, because it is not only about exploiting technology and e-government in service provision, but it is a much more radical change[22]. Art. no. 7 of Digital Administration Code (hereinafter CAD) establishes that anyone has the right to use the services provided by public service providers, regardless of their legal nature, in digital form and in an integrated manner, by using telematics tools made available by public administrations.

Public services provided electronically allow a real upheaval in the relationship between supplier and users, because the service is no longer dropped from above, according to choices made by administrations but is shaped and continuously modified according to needs and requests of users, as detected by data flows that the supplier has available[23]. In this sense, the focal point does not lie in the automation of administrative decisions and procedures, but in the idea of reshaping the organisation and activity of

marota, *Servizi in rete della pubblica amministrazione* (encyclopedic voice), (Agg.) Dig. Disc. Pubbl. 6161, 6170 (2012), networked public service is a set of administrative activities whose provision takes place through the transfer and processing of information (*bits*). It must be considered that this service is a set of legal activities provided by central public administrations in telematic mode, the provision of which is, by law, a subjective right of its beneficiary or applicant; A. Latin, *Ideal versus real regulatory efficiency: implementation of uniform standards and 'fine tuning' regulatory reform*, 37 Stan. L. Rev. 1267 (1985).

[22] On this subject, the reflections carried out by M. Delsignore, *Il contingentamento dell'iniziativa economica privata* (2011) 81-90; G. Cammarota, *Servizi pubblici in rete e applicabilità dei principi classici del servizio pubblico*, in 1-2 Inf. dir. 183, 189 (2005); see L.R. Perfetti, *Contributo ad una teoria dei servizi pubblici* (2001) 33-41; R. Cavallo Perin, *I principi come disciplina giuridica del pubblico servizio tra ordinamento interno ed ordinamento europeo*, 1 Dir amm. 41-50 (2001), national and local public services are provided in ways that promote quality improvement and ensure protection of citizens and users and their participation, in forms including associations, recognised by law, in relevant evaluation procedures and definition of quality standards, a circumstance that seems to be in line with the theories set out in this paper; on economic profiles, see F. Von Hayek, *Legge legislazione e libertà: una nuova enunciazione dei principi liberali della giustizia e della economica politica* (1986) 23-30.

[23] Data management will be discussed at length during this survey, but with regard to figures see V. Berlingò, *Il fenomeno della datafication e la sua giuridicizzazione*, 3 Riv. trim. dir. pubbl. 641-654, 656 (2017); on democratic legitimacy profiles of the data, in general terms, see T. Nabachi, *The potential of deliberative democracy for public administration*, 23 Am. Rev. Pub.Adm. 1-24 (2010).

administrations (in this case, public services) around users, so as to make administrative action directed towards the provision of a service rather than the exercise of power[24]. In conclusion, it is no longer abstract general interest that is taken as a reference criterion for definition and operation of services, but expectations and needs of citizen-users. Final user becomes *raison d'être* of service itself. The public interest is increasingly serving public.

Reasons for this growing interest in digitalization of administrations both at level of international bodies and in various countries around the world are primarily attributable to close relationship between technological progress and productivity and therefore economic development of administrations, and in the area of public services in a perspective of system change, the notion of digital and interconnected administration can play a central role in this change.

In order to delimit the scope of the investigation, this part of the work aims to explore and at the same time assess the compatibility profiles of the key legal features.

This analysis is divided into two different sections: a first section concerning principles that must govern public service provision and profiles of compatibility with digitalization, and a second one on study of two strategic sectors to assess stability of interpretations offered above, with specific regard to health services - also with aspects inextricably linked to recent pandemic - and public transport sector, which has always been a trouble spot for Italian administration.

In the first section, it deals with public services, in general terms, provided in digital form and profiles of compatibility with those principles that must govern the service provision phase. The second section aims to examine profiles related to health and public transport and drifts that market forces on administrations, which must adapt their action regime to these new applications, in order to avoid a Tibetan isolation that would block the economic growth of the country.

[24] S. Civitarese Matteucci, *Umano troppo umano. Decisioni amministrative automatizzate e principio di legalità*, 1 Dir. pubbl. 9 (2019), digitalization seems to be a formidable sidekick of this concept of administrative activity, since it involves a continuous centralization and decentralization of information through multiple units, both within the organization and outside of it, allowing unprecedented forms of transparency and social control.

The assumption of this survey stands in potentially unlimited amount of data that the provider can use as a source of knowledge to make informed decisions affecting the provision of the service, in order to guide and improve it. A more aware, better-informed administration is now a given and an unavoidable condition even when looking at reforms to be implemented, and not only at national level, since the knowledge gap that is constantly present between the administration and businesses risks becoming an insurmountable obstacle to economic development.

There are, at least, two issues that arise; the first concerns data and related re-use[25], the second concerns legislation on databases, understood as the entities or bodies that manage the data available to administrations.

In this regard, it is necessary to recall the necessity that the use of data must be related to the function that the entity (public or private provider of public services in this case) performs.

The use of a fully interconnected administration for provision of public services reduces transaction costs and data collection costs and, above all, extends market access to all potential purchasers, in accordance with the principle of maximum effective opening of the administration to the market.

With reference to possible approaches with which administrations deal with the application dimension in terms of digital provision, the following emerge two typologies: the vertical one, more widespread, which deals with one or more specific aspects related to the urban dimension such as mobility, energy, transport, and the systemic one, which refers to the city as a whole, in its different dimensions, considering it a single system capable of supporting and enabling innovation[26].

[25] On the subject, see F. Pinto, *L'utilizzo delle piattaforme informatiche da parte della pubblica amministrazione: tra falsi miti e veri rischi*, 1-2 Amministrativamente 3, 7 (2018); M.P. Zerman, R. Steffenoni, *Riutilizzo commerciale dell'informazione detenuta nel settore pubblico in materia di dati ipotecari e catastali alla luce dei Trattati europei e della Direttiva 2003/98/CE (C. appello Venezia, Sez. I civ., sent. 20 marzo 2013 n. 624)*, 4 Rass. Avv. St. 51, 55 (2013); B. Ponti, *Il patrimonio informativo pubblico come risorsa. I limiti del regime italiano di riutilizzo dei dati delle pubbliche amministrazioni*, 3 Dir. pubbl. 995, 1002 (2007); for insights into a specific regional experience, see A. Cavallo et al., *A Platform for the Reuse of Public Data in Piedmont*, 1-2 Inf. dir. 433, 440 (2011).

[26] As noted in the document drawn up by Agenzia per l'Italia Digitale, *L'Intelligenza Artificiale al servizio del cittadino* (the White Book on Artificial Intel-

In this part of the survey, the first approach is preferred, to assess the strength of pillars of traditional administration duties in relation to some classic aspects of public services, such as public health and mobility. In other words, a study of a different approach to the issue of public service provision is being carried out in the light of current Italian and European legislation.

By the way, one of objectives of European Directive 2014/24/EU was to modernize procedures for selecting companies through the adoption of digital and telematic systems, which should ensure easier access to the market[27].

The subject, if analyzed from a broader perspective, involves the complex relationships between globalization, administration and market[28].

ligence), available on www.ia.italia.it (2018), it is precisely in the field of public services provided in smart form or through artificial intelligence that relevant issues need to be dealt with. First of all, it is necessary to rethink certain legal provisions with the aim of satisfying, by means of these new technologies, certain universal needs such as respect for freedoms and for the main individual and collective rights. More specifically some problems are raised by the functioning of Artificial Intelligence, that is, those of data quality and neutrality, of the responsibility of those who use algorithms, of their transparency and openness, as well as of the protection of privacy; on the subject, see the document drawn up by The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems, IEEE - Institute of Electrical and Electronics Engineers (2017); on the theme of artificial intelligence in relation to ethics of the algorithm in administrative action, see S. Crisci, *Intelligenza artificiale e etica dell'algoritmo*, 10 Foro amm. 1787- 1792 (2018).

[27] The need was already known in 2010, starting from a Communication of the European Commission, on this point, in a more detailed sense, see G. Marchianò, *Modernizzazione del mercato degli appalti pubblici nella proposta di Direttiva comunitaria (Com (2011) 896 del 20.12.2011): l'impatto sulla normativa nazionale nel settore dei servizi'* (2012) 15-31; critical rethinking of administrative action as a whole in order to be addressed from an interconnected perspective, digital, must be carried out by an analytical and statistical study of the data, please refer to A. Sandulli, *Capire il paese con dati statistici*, 3 Riv. trim. dir. pubbl. 885-888 (2014); L. Ammanati, M.A. Cabiddu, P. De Carli (eds.), *Servizi pubblici, concorrenza, diritti* (2011) 318-320; L. Torchia, *Autonomia dei soggetti e funzionalità del sistema: condizioni di qualità dell'informazione statistica*, 2 Riv. it. dir. pubbl. com. 643-645 (1999).

[28] The subject has been studied and explored in a widespread and authoritative way, only references are made to contributions that have influenced this analysis, C. Franchini, *La disciplina pubblica dell'economia tra diritto nazionale, diritto europeo e diritto globale* (2020) 63-80; with reference to traditional canons of administrative action, cf. L. Giani, *Le funzioni di regolazione del mercato*, in F.G. Sco-

Big Data[29], algorithms and artificial intelligence systems can play a strategic role in the management, development and planning of complex applications, which could improve efficiency of administrative action but risk undermining other values; real-time data analysis can be the basis for predictive systems that can implement efficiency[30].

Moreover, as has been noted in not recent times[31], techno-

ca (ed.), *Diritto amministrativo* (6th ed., 2019) 503-517; L. Casini, *Potere globale* 11-31 (2018); G. Greco, *Argomenti di diritto amministrativo* (vol. 1, 3rd ed., 2017) 364-371; F. Fracchia, *Il diritto dell'economia alla ricerca di uno spazio nell'era della globalizzazione*, 1 Dir. econ. 11 (2012); with a view to judicial protection, E. D' Alterio, *Tecniche giudiziarie di regolazione dei rapporti tra diritto europeo e diritto globale*, in Vv. Aa. (eds.), *Sistemi regolatori globali e diritto europeo* (2011) 1-22; M. D'Alberti, *Libera concorrenza e diritto amministrativo*, 3 Riv. trim. dir. pubbl. 347-354 (2004), value of competition has had an impact on many legal aspects governed by administrative law, in particular with regard to public services award. In some respects, competition rules have supplemented and amended certain traditional legal institutions of administrative law, which must be reinterpreted in full on the basis of conditioning of typical European value of free competition [for an updated interpretation of this topic, cf. M. D'Alberti, *La legge sulla concorrenza, trent'anni dopo*, 2 Munus viii-x (2020)]; cf. on the overall lack of organic design of the models, F. Merusi, *Cent'anni di municipalizzazione: dal monopolio alla ricerca della concorrenza*, 1 Dir. amm. 37-57 (2004); S. Cassese, *Lo spazio giuridico globale*, 2 Riv. trim. dir. pubbl. 323-330 (2002); P. Grossi, *Globalizzazione, diritto, scienza giuridica*, 1 Foro it. II, 151 (2002); M.R. Ferrarese, *Le istituzioni della globalizzazione. Diritto e diritti nella società transnazionale* (2000) 7-11, 18-32; E. Ferrari, *La disciplina dei servizi a rete e la dissoluzione dei servizi pubblici*, in Id. (ed.), *I servizi a rete in Europa: concorrenza tra gli operatori e garanzia dei cittadini* (2000) 11-14.

[29] Although this topic might appear to be recent and innovative, it has already been studied in past, albeit in isolated studies and under other locutions, specifically, massive amounts of data held by public administrations, as demonstrated by G. Cataldi, *Le informazioni come oggetto di attività amministrativa*, in Vv. Aa. (eds.), *Studi in memoria di Guido Zanobini*, (vol. 1, 1965) 283-296.

[30] G. Pitruzzella, *Big data, competition and privacy: a look from the antitrust perspective*, Sp. Iss. Conc. Merc. 15 (2016), in the public debate on the interplay between Big Data and competition two rather different views of the world have been developed. The first one describes Big Data as a key input controlled by dominant firms, which prevents competitors from entering the market and entrenches incumbents dominant positions, allowing them to exploit consumers. The second one describes Big Data as a commodity, something that be readily sourced from a variety of providers and that allows companies to offer innovative and better quality services to consumers.

[31] Please refer to F. Giglioni, *La 'domanda' di amministrazioni delle reti intelligenti*, 4 Ist. fed. 1049-1069 (2015); A. Perini, *Le trasformazioni in atto nel settore dei servizi di pubblica utilità: privatizzazione, concorrenza e regolazione*, 2 Dir. soc. 243 (1997).

logical developments have laid the basis for the coexistence of public and private companies in the market, causing the end of so-called natural monopolies.

The discussion is not recent, as evidenced by several analyses that have highlighted how the implementation of systems that allow data exchange can improve the action of the public administration[32]. Also in this case, as previously pointed out, one of the key aspects seems to be predictability of administrative action, to be oriented through heritage of Big Data that show behaviours and preferences of citizens (that are final users of this service).

In the preamble, it should be made clear that management and re-use of data constitutes a public service itself[33]. According to this model, each phase (acquisition, management, use, reuse of data) represents an activity[34] because it is related to relationship of exchange between a supplier (public or private, depending on who manages the database) and the user, for the transfer of an in-

[32] See A. Masucci, *Erogazione online dei servizi pubblici e teleprocedure amministrative. Disciplina giuridica e riflessi sull'azione amministrativa*, 4 Dir. pubbl. 991, 997-1002 (2003), the use of technology makes it possible to collect data in real time, which can improve the delivery of public services and facilitates the aggregation of data from different sources; in a comprative perspective, see D. Pérez-González, R. Daiz-Daiz, *Public services provided with ICT in the smart city environment: the case of Spanish cities,* in 21 Jour. Un. Comp. Sc. 248, 254 (2015), "citizens are demanding greater efficiency, sustainable development, quality of life and improvements in resource management. In order to address these questions, local authorities are considering the implementation of management models which, jointly with energy efficiency, new infrastructures and environmental protection, mainly focus on ICT".

[33] G. Carullo, *Gestione, fruizione e diffusione dei dati dell'amministrazione digitale e funzione amministrativa* (2017) 157-165, individual phases can be autonomous since they are managed by different subjects. On the contrary, services must be coordinated and linked together and this interconnection is of fundamental importance for the provision of the data dissemination service; M. Maggiolino, *Il riutilizzo dell'informazione detenuta dal settore pubblico: alcune riflessioni di politica e diritto alla concorrenza*, 6 Conc. merc. 765 (2012); please also refer to F. Vetrò, *Il servizio pubblico a rete. L'esempio paradigmatico dell'energia elettrica* (2005) 4-7, according to which, there must be a hub that directs all the elements that belong to a network, material or immaterial; L.M. Friedman, *The Law and Society*, 38 Stanf. L. Rev. 763-780 (1986).

[34] See G. Carullo, *Big Data e pubblica amministrazione nell'era delle banche dati interconnesse*, 2 Conc. merc. 181-183 (2016) each phase must satisfy a public interest which must be identified by a legislative provision, since all activities must be instrumental to the purpose for which the data is requested.

tangible asset, i.e. the data.

On this occasion, it is not possible to provide an overview of excellent analyses carried out on this core subject by Italian scholars, but it is appropriate to fix some minimum cardinal points.

Specifically, it is essential to mention two authoritative reflections, which are the precondition for the analysis carried out.

The first mention is related to the consideration that interactions between administrations and market involve a very dense and intricate series of relationships; this articulated network can benefit from a continuous sharing of data, to facilitate and encourage relationships, also from the point of view of European market[35].

The second reflection instead claims that the continuous and permanent instability of the Italian legal framework in order to award public services makes it difficult to acquire a detailed knowledge about the different ways in which the public service itself is handled[36]. Precisely because of this instability, the possibil-

[35] This analysis was carried out by G. Corso, *Riflessioni su amministrazione e mercato*, in 1 Dir. amm. 4 (2016); concerning relation between administrative authority and the market, from the point of view of the stability of the emerging legal positions, see M. Trimarchi, *Stabilità del provvedimento e certezze dei mercati*, 3 Dir. amm. 321 (2016); M. Clarich, *La riflessione scientifica attuale sulla regolazione dei mercati e la prospettiva delle 'spinte gentili'*, 2-3 Diritto e processo amministrativo 413-421 (2015); G. Amato, *Il mercato nella Costituzione*, 1 Quad. cost. 7-12 (1992); on the subject of business management between private and administrative law, see E. Capaccioli, *La gestione di affari nel diritto amministrativo* (1956) 45-56, on alleged spontaneous management of public affairs with distinctions with the different hypothesis of formalized entrustment of such public tasks. Two types of effects result, for what is relevant in this investigation, on recipients understood as mere passive terminals of services, expression of administrative function. The issue fades into the practical results that the administration is required to achieve (99).

[36] F. Merusi, *I servizi pubblici instabili* (2nd ed., 1990) 14, noted that the notion and the legal framework of the local public services were unsettled, this definition was quoted by M. Dugato, *L'imperturbabile stabilità dei servizi pubblici e l'irresistibile forza dell'ente pubblico*, 3 *Munus* 505 (2012); cf. E.M. Garcia, *Il dialogo come metodo, a proposito della ricostruzione dei servizi pubblici nella prospettiva europea*, in S. Torricelli (ed.), *Ragionando di diritto delle amministrazioni pubbliche. In occasione dell'ottantesimo compleanno di Domenico Sorace* (2020) 9-18, the need to interpret, from a methodological perspective, public services as a method of dialogue between the administration and private individuals; recenlty, see G. Piperata, *I servizi pubblici locali*, in E. Carloni, F. Cortese (eds.), *Diritto delle auto-*

ity of receiving data and information to guide this management of public services (which in Italy is often inadequate[37]) and create a smart network can be a solution to explore. A reticular model of organising public powers, and therefore also public services, is emerging, which overturns the current approach and contributes to a genuine redefinition of relations between authorities and citizens[38].

The interconnection of data and the use of ICT for provision of public services can be a tool to achieve the so-called performance administration[39]. Under this reading, rule of law, which must

nomie territoriali (2020) 455-479; see also M. Dugato, *La crisi del concetto di servizio pubblico tra apparenza e realtà*, 3 Dir. amm. 511-530 (2020); in the same direction, cf. F. Liguori, *Notazioni sulla presunta fine del dualismo tra pubblico e privato*, 1 GiustAmm 4, 6 (2014); see, in a historical way, F. Merusi, *La disciplina pubblica delle attività economiche nei 150 anni dell'unità di Italia*, 1 Dir. soc. 93-117 (2012) which notes how complex it is to find unifying traits for the discipline and its interpretation; for a manualistic reading, cf. R. Villata, *Pubblici servizi. Discussioni e problemi* (5th ed., 2008) 267-315.

[37] Recently on the subject, see the analysis conducted by P. Chirulli, *Servizi pubblici deregolamentati? Il caso del trasporto pubblico locale*, in Vv. Aa. (eds.), *Diritto amministrativo e società civile* (2020) 401-421; A. Mori, *Traiettorie di mercatizzazione e distribuzione dei rischi di esternalizzazione di servizi pubblici in Europa*, 3 St. merc. 459-471 (2019); L.R. Perfetti, *Modelli di affidamento del servizio nei trasporti pubblici locali*, in F.A. Roversi Monaco, G. Caia (eds.), *Il trasporto pubblico locale. Principi generali e disciplina di settore* (vol. 1, 2018) 91-109; G. Pizzanelli, *Innovazione tecnologica e regolazione incompiuta: il caso dei servizi di trasporto non di linea*, 1 Munus 97 (2016); from a classical perspective, on this subject, reference should simply be made to P. Alberti, *I trasporti pubblici locali. Pianificazione e modelli di gestione (Lineamenti giuridici)* (1989) 44-67.

[38] The issue of crisis and the calculability of certain legal factors, authoritatively cf. N. Irti, *La crisi della fattispecie*, in Id (ed.), *Un diritto incalcolabile* (2016) 19-21; for a general analysis on this point, see F. Rimoli, *Certezza del diritto e moltiplicazioni delle fonti: spunti per un'analisi*, in F. Modugno (ed.), *Trasformazioni della funzione legislativa* 90-92 (2000); G. Tarello, *Sul problema della crisi del diritto* (1957) 16-19.

[39] The contributions of scholars on the subject are numerous, here it is necessary to mention L. Giani, *Regolazione amministrativa e realizzazione del risultato*, in M. Immordino, A. Police (eds.), *Principio di legalità e amministrazione di risultati. Atti del Convegno, Palermo 27-28 febbraio 2003* (2004) 307-314; L. Giani, *L'operazione amministrativa nella prospettiva del risultato: nel procedimento e nel processo*, 1 Nuove Aut. 205-221 (2012); M. Cammelli, *Amministrazione di risultato*, in *Annuario AIPDA* (2002) 107-111, the inclusion of the notion of result as a parameter for evaluating administrative action has always been included in the context of good performance. In the last twenty years, direct legal agreement has been reached on the result, taken as a reference between the administration and the

govern all administrative activity, including of course public services, must be interpreted in a less formal sense, not on the basis of legislative provisions, but on the basis of the public interest actually pursued. This reading, of course, makes it possible to read provisions and principles differently and to read the digitalisation that stands between user and provider differently.

In the same way, already in 2000, European Council ordered Member States to ensure that citizens had electronic access to all public services and provided for a series of measures to facilitate the exchange of information to improve the management of administrative action, including public services, even if no decontraction of the general categories was envisaged.

It is appropriate to clarify that the improvement that can result from the use of Big Data in public services is not only about the celerity of service provision[40].

One of the most obvious improvements that can come from this smart governance[41] of public services is the chance that ser-

citizen; on the issue of continuity of supply, cf. S. Tarullo, *Buona prassi e continuità dell'amministrazione pubblica*, 4 Dir. amm. 669-672 (2012), public administration encounters in its action a limitation derived from the very way in which it repeats its action over time and thus becomes objective; G. Corso, *Amministrazione di risultati*, in Vv. Aa. (eds.), *Annuario AIPDA* (2002) 127-131, the activity of the public administration must be evaluated in the light of human and economic resources and not only on the basis of the indications given by the legislative data.

[40] Timeliness in the delivery of public services and speed in the exchange of information are values that public administration must pursue in all areas of its activity, including public services. [F. Cardarelli, *3 bis. Uso della telematica*, in M.A. Sandulli (ed.), *Codice dell'azione amministrativa* (2nd ed., 2010) 427-434, the use of interconnected databases accelerates all administrative activity and is a legal prerequisite for administrative cooperation, an expression of the general principle of loyal cooperation between public authorities]; in general terms, on timeliness of administrative activity and importance of time factor in performing public tasks, see, L. Giani, *I tempi (dell'azione e della decisione) dell'amministrazione tra certezza e affidamento*, in Vv. Aa. (eds.), *Scritti per Franco Gaetano Scoca* (vol. 3, 2020) 2461-2494; recently, see S. Vernile, *Ragionevole durata del procedimento amministrativo e "sorte" dell'atto tardivo*, 3 Dir. econ. 337-377 (2020); G.D. Comporti, *Tempus regit actionem. Contributo allo studio del diritto intertemporale dei procedimenti amministrativi* (2001) 11-34; in a classic way, cf. A. Angiuli, *Studi sulla discrezionalità amministrativa nel quando* (1988) 41-56.

[41] See, *ex multis*, R. Cavallo Perin, G.M. Racca, *Smart cities for an intelligent way of meeting social needs*, in J.-B. Auby, E. Chevalier, E. Slautsky (eds.), *The future of Administrative Law* (2020) 431-437.

vices will continuously be adapted to the requirements of citizens. This circumstance seems to be a point of landing for administrations to aim for, but it entails obvious difficulties and some critical issues.

A management of public service that adapts itself according to how users needs change (disclosed in real time through the databases held by administrations, and managed by different aims, in a single database) allows administration to continuously adapt the delivery of the service itself. The public service designed in this way becomes flexible and diversified because the adaptation of the system can become more timely (depending, of course, on the technical time required for the various sectors involved); the smart management of public services must be based on a flexible and changing virtual system.

In addition, administrations on the basis of studing data flows can differentiate provision of the service, can orient it, it can differentiate it with a view to a minimum dispersion of resources, both human and financial.

In such a system, it is clear that premises outlined in the first part of this survey must have found their proper and optimal place, in a clear regulatory context and with a body of officials prepared for this model of public service delivery.

In this pattern, based on re-use of data, public services are no longer top-down ones, are no longer related to organizational profiles, but services are designed and implemented according to needs of users.

Another typical feature of public services that is implemented through smart administration paradigm is the principle of service continuity, which goes beyond the notion of regular and continuous delivery.

In this sense, this principle of continuity must be understood as the immediate and uninterrupted availability of the service; the citizen must be able to interact with the administration (intended as a provider of the public service) at any time and from any place.

Digital public services can perform a different function according to the object of economic activity carried out, because for some enterprises the data collected are an input for production, i.e. one of the factors that contribute to the improvement of the business, while for other enterprises the data are the result of the

economic activity (i.e. the output) if the activity has as its object the collection and resale of the data.

This set of relationships between data and market becomes even more intricate if the public entity, i.e. public administration as regulator or traditional administration, is involved.

The issue seems extremely problematic[42], since it requires the search for a point of balance between many different factors, such as data as a legal asset, the protection of fair competition[43],

[42] On the subject, from a European and broader perspective, see recent editorial by G. Pitruzzella, *L'Europa del mercato e l'Europa dei diritti*, 12 Federalismi 4-6 (2019), on the evolutionary path followed at European level, with the aim of avoiding excessive sacrifice of any of the values involved.

[43] In this sense, see the considerations carried out by F. Vessia, *Big Data: dai vantaggi competitivi alle pratiche abusive*, 6 Giur. comm. 1064 (2018), in digital markets, the use of data has become crucial, even though this use can lead to abusive market practices. One of the most worrying effects of the data-driven digital economy is the trend towards concentration of market power in the hands of a few operators with large market shares and, as a result, the danger of foreclosure effects. Increased transparency in online markets can have conflicting competitive effects, both positive and negative. On the one hand, consumers can easily know the characteristics and, above all, the prices of the services and products offered on the telematic platforms by competing companies and compare them more easily, on the other hand, greater transparency and the exchange of information, which is also mirrored among operators, can have the effect of inducing an alignment of prices. The exchange of information has traditionally been one of the so-called facilitating practices, which facilitate the achievement of tacit collusive agreements (i.e. concerted practices) on the prices of products or services provided by companies that should, instead, be independent on the market by diversifying their offers as much as possible. This is due to the fact that price observability between competitors helps companies to set a unit price, while maintaining existing balances over time; on the issue of abuse of dominant position in the presence of Big Data and barriers to access to digital markets, see J. Harbour, *Section 2 in a Web 2.0 World: an expanded vision of relevant product*, in 76 Antitrust L. Journ. 769-777 (2010); on the subject it is necessary to point out the contribution as follows V. Giomi, *Mercati in attesa di mercato. La trasferibilità del provvedimento amministrativo tra ragioni pubbliche e dinamiche private* (2019) 27-34, according to which, in a broader perspective, which intercepts the issue of digital markets, the secondary market for government securities in sectors with administered markets with supply-side quotas, while responding to economic pressures based on private autonomy, affects the social profile of public interests guaranteed by quantitative planning tools. The legislative choice to provide (without regulating) for the private transferability of the authorizing title in those areas which are not subject to liberalization and which are recipients of pro-competitive measures of little impact, is in clear contrast with the logic of the system in which it is called to operate. There is a high

the optimal execution of public service, in the absence of a body of rules that takes into account all factors in relation to the current development of databases.

An innovative approach to management of public services in view of interconnection of data and therefore in implementation of a digital-form administration requires to balance different interests, but it is necessary to make a reference to individual public services, in which individual values assume different scope and importance.

Attempts aimed to examine the issue from an abstract perspective may not lead to any definitive conclusion, and this is the reason why this paper opts for a concrete analysis of different public services in order to be able to study in concrete terms the balance of the different readings involved.

It is clear that especially with regard to problem of privacy protection, question of public services provider that manages and reuses the data is primary; in other words, if data are managed by a public entity (as in the case of in house providing, a mode that can be explored by administrations, but which is structurally not compatible with digital) or by a private entity (as in the case of a service entrusted to a private firm through a public tender) makes necessary to make two different analyses. Obviously, in this study it is not possible to provide an accurate description of the complex issue of public service delivery in Italian law, but on a case by case basis, in relation to specific contexts, it will be necessary to report the current discipline, in order to provide an analysis that takes into account all the factors involved.

For these reasons, the analysis is carried out in relation to different public services, in a general reading first and then in a more strategic perspective, to be able to reach some conclusions in an inductive way.

SECTION ONE: Maintenance and compatibility of public service charter principles with progressive digitalization policies

risk that the private circulation of the authorizing measure will trigger derogatory mechanisms of resistance to the market, deconstructing from within a system of useful contingency now stabilized due to the intrinsic social protection of economic activities.

2. Service and user relations and delivery phase principles. Digitalization and complex system retention

Under Italian law, relations between provider and users are governed by various sources of regulation and protection, mainly of European origin, based on various principles, with a view to increasing protection for citizens as users.

Before tackling the investigation concerning the possible application of the current disciplines and the friction profiles, it is necessary to take into account, albeit briefly, given complexity of the subject, possible instruments of personalization (in the collective sense) and orientation of public services.

A first tool, with well-known difficulties of regulating it, is IoT (Internet of Things), which in relation to studied studied is supplemented by smart service and matering hypotheses in order to update the application framework of IoT solutions for the consumer world, with particular emphasis on Smart Home, elaborating different *ad hoc* surveys on final consumer and analyse the application framework of Industrial IoT projects (with focus on Smart Factory and Smart Logistics) through elaboration of a survey addressed to companies (both large enterprises and SMEs), deepening the most representative success stories in the main business sectors.

In terms of effects, on the horizon, but the topic seems far from even a vaguely concrete configuration, emerges data-driven regulation[44], a type of discipline, necessarily flexible or through soft-law acts that changes according to the needs of users embedded in Big Data.

In order to assess in detail existing aporias and compatibility profiles, here a juridical reference is taken to be Public Service

[44] For a first profile analysis, cf. A.G. Ferguson, *The rise of Big Data policing. Surveillance, race and the future of law enforcment* (2017) 107-129; see F. Mattasoglio, *Algoritmi e regolazione*, 2 Riv. reg. merc 226-244 (2018); A. Canepa, *Le piattaforme fra nuove dinamiche di mercato e ricerca di strumenti regolatori efficaci*, 2 Riv. reg. merc. 181-195 (2018), on risk profiles due to the need to envy networks owners, which often hides behind contractual or concessionary mechanisms that make responsibilities disappear; data-driven regulation is a remedy for the critical nature of ordinary methods of regulating economic relations, on which there is a vast bibliography, but please refer to M. Clarich, *Editoriale*, 1 Riv. reg. merc. 1-4 (2015); with reference to foreign literature, is shared the general theoretical approach offered by D. Evans et al., *Matchmakers. The new economics of mutiused platforms* (2016) 85-100.

Charter[45], adopted by DPCM 27 January 1994[46], which was followed by various provisions, mostly fragmentary, whose objective remained an agreement between providers and private users, to which technology now stands in the way, potentially destined to alter the (precarious, to be conservative) balance in the provision of public services.

This Services Charter set itself the ambitious task of improving the quality of life of users by improving and adapting the

[45] On this topic, there are many authoritative bibliographical references, among others, with a profile relating to the insolvency management of the service, cf. E. Caterini, *L'utente dei servizi pubblici e la riforma fallimentare: nuovi scenari*, 1 Rass. Dir. civ. 55-83 (2019); in general terms, see G. Mastrandrea, *Le Carte dei Servizi Ferroviari e la qualità della prestazione*, in Vv. Aa. (eds.), *Studi in memoria di Elio Fanara* (vol. 2, 2008) 197-202; B. Delfino, *La responsabilità per danni alla persona nell'erogazione di servizi pubblici* (2007) 124-141; F. Giglioni, *Le garanzie degli utenti dei servizi pubblici locali*, 2 Dir. amm. 353 (2005), Service Charter thus assigns a strong role both to service providers and to citizens in orienting all public service activities towards their mission: providing good quality service to citizen-users. In addition, it provides for ways, to be publicised in the most appropriate ways, through which citizens themselves can easily access complaints procedures concerning the violation of principles; G. Iacovone, *Tecnica, politica e (in)effettività della tutela dell'utente di servizi di pubblica utilit*à, 6 Foro amm. CDS 2085-2090 (2003); G. Vesperini, *L'attuazione della carta dei servizi pubblici in Italia*, 1 Riv. trim. dir. pubbl. 175-181 (1998), the right of the service charter, unitary for all services for material regulation of relationship and differentiated for mechanisms of implementation, is intended to ensure substantial and tendential uniformity. Risks were and are linked to the fragmentation of control techniques and apparatus, which may undermine the very unity of the apparatus and legal regime for protecting users, including in terms of the expectation of service quality; S. Battini, *La tutela dell'utente e la carta dei servizi pubblici*, 1 Riv. trim. dir. pubbl. 185 (1998); G. Vesperini, S. Battini, *La carta dei servizi pubblici. Erogazione delle prestazioni e diritti degli utenti* (1997) 223-260, 291; A. Pajno, *Servizi pubblici e tutela giurisdizionale*, 3 Dir. amm. 551 (1995), according to which the Charter should have had a merit in helping to clarify and specify a precise obligation to provide a service, and the user's guarantee lies in knowing in advance exactly what levels are required to characterise the service; L. Maresta, A. Parigi, *Analisi comparata di alcune Carte dei servizi adottate in Italia*, in *La città più bella. Guida alle Carte dei servizi pubblici* (1996) 17-44.

[46] Reference is made to Decree Law 12 May 1995, no. 163 which provides for adoption of service charters by all public service providers, including those operating under concessions or agreements; 1994 DPCM took up ideas of a study drawn up by Presidenza del Consiglio dei Ministri (Dipartimento per la funzione pubblica), *Carta dei Servizi pubblici. Proposte e materiali di studio*, in *Quaderni del Dipartimento per la funzione pubblica* (1993).

services provided[47]. According to traditional methods, as is well known, even within public services, there was a public scheme aimed at identifying the user as merely the recipient, obviously in a subordinate position, of the service, and as such incapable of influencing the quality of the service provided. The identification of the level of service quality, therefore, was linked to choices of administrative organisation entrusted exclusively to the discretion of the public body providing the service[48].

Subsequent legal proceedings to privatize and liberalize

[47] Cf. F. Bassanini, *I servizi pubblici locali tra riforma e referendum*, in Id. (ed.), *I servizi pubblici locali tra riforma e referendum* (2011) 8-9, 11, which is ahead of its time compared to later analyses, since it notes that modernising public services is also a crucial factor for quality of life and social cohesion, and that people' mobility, access to essential goods, the dissemination of information and knowledge (TLC), monitoring of environmental and social risk factors, and a growing proportion of social and health services (pending telemedicine) depend on high-quality infrastructure networks and network services.

[48] Cf. M. Calabrò, *Carta dei servizi, rapporto di utenza, qualità della vita*, 1-2 Dir. amm. 373-377 (2014), Service Charter is a tool aimed, through the predetermination of obligatory and binding performance standards, at reducing those profiles of asymmetry towards the provider, which arbitrarily justify the provision of forms of protection and make one doubt the correctness of the reconstruction of the nature of the users' legal positions in terms of subjective rights only; see, with reference to sectoral issues, L. Giani, *Il ruolo delle carte dei servizi e dell'azione per l'efficienza nella garanzia della effettività dei diritti degli individui-utenti nel settore socio-assistenziale. Il caso dei disturbi specifici dell'apprendimento*, in M.R. Spasiano, M. Calabrò (eds.), *I servizi pubblici in Italia e Argentina: un'analisi comparata* (2013) 121-131; in a specific perspective, cf. M. Interlandi, *Rilevanza giuridica della qualità dei servizi pubblici e disciplina del servizio idrico integrato nell'attuale processo di liberalizzazione e regolazione nel mercato*, 1 GiustAmm 1-12 (2012); M. Ramajoli, *La tutela degli utenti nei servizi pubblici a carattere imprenditoriale*, 3-4 Dir. amm. 383-387 (2000), admitting possible limitations, even incisive ones, on liability towards users at the moment of providing a service is in open contrast with traditional assertions according to which, in terms of public services, there is a preliminary phase of organising and planning the service, which is entirely public, and a phase of actual provision, governed exclusively by private law; G. Napolitano, *Servizi pubblici e rapporti di utenza* (2001) 45-65, 81; L. Ieva, *Il principio della qualità del servizio pubblico e la 'Carta dei Servizi'*, 3 Foro amm. 229-241 (2001), accordingly, the basic idea is to provide a different preventive protection mechanism consisting essentially of identifying organizational measures suitable for ensuring a higher level of service quality. More specifically, service charters are intended to constitute a sort of pact with citizens geared towards customer satisfaction; F. Porretta, *Una carta per l'efficienza: la carta dei servizi pubblici* (1998) 14-41, 66; F. Pugliese, *L'autorità di regolazione dei servizi pubblici essenziali. I controlli interni*, 2 Riv. trim. app. 223 (1995).

[49]this sector have led to a profound rethinking of private users and, more generally, of user relations, which have long been marked by specific rights and obligations on both sides, i.e. provider and user. In this sense, a service report emerges in which individuals are equally coordinated and a series of obligations are imposed on them[50]. Services Charter provides for and imposes a series of compulsory and binding performance standards, a sort of manifesto in which it is clearly and completely stated what the user has right to demand from a given provider.

The aim of public service quality is a precise legal obligation that can be deduced from overall system of regulations in question and, even before that, it is an important organizational obligation, which provides a measure of management capacity in a modern country, as well as indicating the stage of socio-economic development reached, and obviously digitalization is part of this line and should be a formidable ally for better service provision, provided that there is no obvious contraction of users' rights.

Among its aims is that of bringing together two sides of a legal relationship, of allowing citizens-users to become protagonists and not mere recipients of service, by actively participating in identifying quantitative and qualitative levels of the services that the provider is obliged to offer, as well as in verifying their compliance, even outside courts.

Before moving on to a detailed analysis of individual principles guiding public service provision, it is necessary to consider, on account of having introduced - by means of the law converting simplification Decree Law 2020 (Law no. 120 of September 11, 2020) - into the text of Law 7 August 1990, no. 241, the provision according to which relations between citizens and public administration are based on cooperation and good faith[51], which is obvi-

[49] Cf. F. Liguori, *Liberalizzazione, diritto comune, responsabilità. Tre saggi del cambiamento amministrativo* (2nd ed., 2019); M. Cafagno, F. Manganaro, *Unificazione amministrativa e intervento pubblico nell'economia*, 1 Dir. econ. 57-108 (2016).

[50] R. Cavallo Perin, *Servizi e interventi pubblici locali*, in R. Cavallo Perin, A. Romano (eds.), *Commentario breve al testo unico sulle autonomie locali* (2nd ed., 2006) 618-619; L. Mancini, *I contratti di utenza pubblica*, 1 Dir. amm. 113-120 (2002).

[51] This law comes to establish a concept that was developed by authoritative doctrine 50 years ago, as demonstrated in authoritative research F. Merusi, *L'affidamento del cittadino* 34-50 (1970); F. Merusi, *Buona fede e affidamento nel diritto pubblico. Dagli anni Trenta all'alternanza* (2001); moreover, this approach has

ously also applicable to stage of provision of the public service, even if provided in digital form.

On the one hand, depersonalising users avoids and prevents violations due to discrimination, but on the other hand, there seems to be little room for collaboration and participation. This consideration arises from a belief that collaboration and participation would be reduced by digitalization, almost nullified.

In digital public service delivery, participation and dialectics seem to be reduced, as the provider can disregard several aspects that it has to guarantee in the traditional public service, without a prior adversarial process that, in any case, would be marginally useful[52].

Reached this point in this survey it seems appropriate to examine strength of individual principles of Services Charter in order to understand how much digitalization may alter or foster the legal regime and how much it affects the quality-of-service delivery.

2.1 Ensuring equal rights for users: a potential landing place and a bitter reality

The first priority referred to in Service Charter is equality between users, a corollary of equality between citizens as enshrined in Art. no. 3 of Constitution.

The aim of this provision is to ensure that public service provision is inspired by equal rights for users. Rules concerning relations between users and public services and access to public services must be the same for all. No distinction during provision

also been taken by administrative justice, *ex multis*, recently, see TAR Lazio, Rome, Sec. II, 13 January 2021, no. 410, 1 Amministrativista (2021), since good faith places limits upon exercise of a right, ownership of that right in no way confers an unconditional power to engage in formally permissible conduct. On the contrary, on account of solidarity and objective good faith, law confers a power that always knows a functional limit given by the reason for which legal system acknowledge that right.

[52] The theme is also examined with similar criticism as in this analysis P. Piras, *Comunicazione e innovazione nell'amministrazione gattopardo. I social media per un nuovo rapporto cittadino-pa: nulla di fatto?*, cit. at 16, 241-263 (2020); M. Bombardelli, *La comunicazione nell'organizzazione amministrativa*, in G. Arena (ed.), *La funzione di comunicazione delle pubbliche amministrazioni* (2004) 89-101.

of services may be made by the provider[53].

Hypothetically, digitalization could turn out to be a factor contributing to equality between users, who would be reduced to IP addresses, thus insusceptible to disruption and equal treatment[54], during provision of the service.

Long-standing issue of digital divide, in some ways, is not relevant in the service execution phase but in the preceding phase of access to the service.

The question must therefore be put in another perspective, namely whether there might be a risk of unequal treatment in providing online services. The answer seems to be, at least at first sight, negative, since any violation of the principle of equality would not be inherent in *ratio legis* referred to above, i.e. the prohibitions placed on provider to discriminate on the basis of sex, race, language, religion and political opinions would not take place because the user is depersonalized behind a code.

Inequality is perceived in accessing the service, but there do not seem to be particular criticalities in delivery, because there are no grounds for different regimes and different choices by the provider, based on violations commonly deduced in enforcement phase.

It seems to be with a sense of favour towards digital public services, but on closer inspection it is not a question of lack of discrimination and infringements but of unconscious respect for a principle that must necessarily inform all relations in a democratic state, far beyond the issue of public services analyzed here.

It is important that citizens (i.e. users) expectations are taken into account in organizing and operating online services.

The relevance of expectations of citizen-user within organization and functioning of online services is intertwined with liability of the provider of online services with respect to users, in line with principle of equality between different service users, the ob-

[53] Cf. G. Amato, *Cittadinanza e pubblici servizi*, in Vv. Aa. (eds.), *Le istituzioni della democrazia* (2014), 235, 244; cf., in a similar perspective. C. Franchini, *Le principali questioni della disciplina dei servizi pubblici locali,* in Vv. Aa. (eds.), *Studi in onore di Leopoldo Mazzarolli* (vol. 2, 2007) 367-370

[54] On wider issue of relation between Internet and right to equality, see S. Rodotà, *Il diritto di avere diritti* (2015) 23, 77-81; G. De Minico, *Internet. Regole e anarchia* (2012), 35, 88-90; F. Giglioni, *Le garanzie degli utenti nei servizi pubblici locali*, cit. at 45, 365.

jective is long term and indiscriminate as it falls on responsibility of the provider who has a specific interest, therefore, to respect this assumption.

If, on one hand, the cited datum seems, fortunately, not to be surmountable, the question of digital divide risks severing this link with equality already upstream[55], since lack of access to digital services by users who do not own devices or access to networks appears to be an inadmissible violation and brings back the theme with respect to flawed Italian public policies, which have constantly advocated the unrealistic prospect of 'digital at zero cost'.

2.2 Impartiality in delivery and service continuity principle: undoubted advantages of digitalization

The Service Charter provides for impartiality and continuity of service as further criteria for service provision.

Impartiality is to be understood as an obligation imposed on the service provider, and individual clauses of general and specific service conditions and rules governing service provision are to be interpreted accordingly[56].

In relation to impartiality, even aforementioned conclusions on equality are confirmed, albeit with different paths and approaches, since system of public services provided in digital form does not have access to methods that could easily violate impartiality understood as operational equidistance with respect to all users[57].

[55] See G. Saraceni, *Digital divide e povertà*, 2 Dir. fond. 1-19 (2019).

[56] On this subject, the following interpretations should be noted L.R. Perfetti, *Miti e realtà nalla disciplina dei servizi pubblici locali*, 2 Dir. amm. 387-393, 396 (2006), on criticalities and an overly articulated system, which expands its problems, which are all too evident in the tendering phase, even into delivery phase; on specific aspects, but fully compliant, B. Giliberti, *L'amministrare in senso oggettivo tra libertà e funzione. Riflessioni a margine di un recente caso in materie di libere università*, 1 PA Persona e Amministrazione 71-80, 82 (2019); G. Piperata, *Tipicità e autonomia nei servizi pubblici locali* (2005) 112-122, 134; see, G. Montedoro, *Economia e società circolare: quali trasformazioni dello Stato e del diritto amministrativo?,* 1 Dir. soc. 175-181 (2020), how principles in general hold up in view of inevitable changes to which the State and public administrations are subjected.

[57] Similar to the general reflections made by A. Morrone, *Verso un'amministrazione democratica. Sui principi di imparzialità, buon andamento e pareggio di bilancio*, 2 Dir. amm. 381-390, 397-399 (2019); M. Avvisati, *Neutralità, imparzialità e azione amministrativa*, 12 Federalismi 15-20 (2020), impartiality

Moreover, Art. no. 1 of CAD itself provides that public administrations, in autonomously organizing their activities, shall use information and communication technology for achieving objectives, among others, of impartiality[58].

It is true that, in interpreting legislation, a conceptual solution has been sought by distinguishing between activities directed internally and externally to public administrations: internal impartiality would concern structure of public offices and resource management, whereas external impartiality[59] would concern relations between the public administration and private individuals, as well as between various public bodies.

The latter assumption obviously lends itself to application also within public service delivery and there is no reason to doubt that digitalization will not alter these balances. In line with the political and economic culture of New Public Management, providers are entities invested with certain public resources, the use of which they must account for to users of the services they offer.

Continuity of public service is guaranteed by digital technology, which obviously does not provide for schedules or limited

represents public administration's ability to operate objectively and equitably, thereby countering pressure from interests other than those institutionally entrusted with the exercise of function; S. Spuntarelli, *Il principio di legalità e il criterio di imparzialità nell'amministrare*, 1 Dir amm. 223-231 (2008); on the subject, in general terms, please refer to the unsurpassed work by U. Allegretti, *L'imparzialità amministrativa* (1965) 44-51.

[58] Cf. L. Casini, *Lo Stato nell'era di Google*, 4 Riv trim. dir. pubbl. 1111-1148 (2019); G.M. Racca, *La modellazione digitale per l'integrità, l'efficienza e l'innovazione nei contratti pubblici*, cit. at 11, 741 digitilazation and, conversely, delivery of public services allows for more analytical and effective assessments in pursuit of better quality design, with reduced costs and lead times; I.M. Delgado, *La riforma dell'amministrazione digitale: un'opportunità per ripensare la pubblica amministrazione*, in L. Torchia, S. Civitarese Matteucci (eds.), *La tecnificazione della publica amministrazione*, in L. Ferrara, D. Sorace (eds.), *A 150 anni dall'unificazione amministrativa italiana. Studi* (vol. 4, 2016) 133, 151-157.

[59] Although from a very sectoral perspective, the approach taken by S. Cognetti, *Parteneriato istituzionale e servizi alla persona. A proposito di "le fondazioni di diritto amministrativo: un nuovo modello" di Antonio Romano Tassone*, in Vv. Aa. (eds.), *Scritti in memoria di Antonio Romano Tassone* (vol. 1, 2018) 705-725; A. Moliterni, *Solidarietà e concorrenza nella disciplina dei servizi sociali*, 1 Riv. trim. dir. pubbl. 89-101, 103 (2015); C. Colosimo, *L'oggetto del contratto, tra tutela della concorrenza e pubblico interesse*, in G.D. Comporti (ed.), *Le gare pubbliche: il futuro di un modello* (2011) 65-83, 95-97; F. Di Porto, *Note sul regime giuridico delle privatizzazioni in Italia. In particolare nei servizi pubblici essenziali*, 6 Giur. comm. 738-750 (1999).

time windows but allows uninterrupted and substantially unlimited activity on the part of the provider, since telematic platform allows access to services, with direct contact between user and provider guaranteed by means of a more immediate platform, which undoubtedly brings users closer to services and makes them more easily accessible to all.

Expectations of users with regard to the public service pour into the operational continuity of the latter perhaps the most easily appreciated and perceived canon of service improvement, since digital space reduces time and guarantees an uninterrupted use, to which the public service is naturally entitled[60].

However, duty to guarantee a continuous and uninterrupted service is incumbent on providers, who may use digital system as a support for different phases (e.g. user assistance service), and it is generally considered that digital systems provide a formidable support for continuity of service.

In fact, delivery times would be guaranteed by digital perspective, which overcomes typical criticalities that lead to delays in public service delivery. This issue, of course, involves the extensive subject of the administration's compliance with time limits[61] and related expectations of private users in terms of legitimate expectations.

2.3 Broadening choice and deterritorialization of providers: favouring competition and risks for users

Dematerialization of services, wherever this is possible, opens the way to an unlimited number of subjects that can play a role as service providers, provided, however, that this favour has its effects more in antecedent phase, i.e. awarding phase, than in

[60] On this subject of service maintenance and digitalization, see T.A.R. Aosta, Sec. I, 3 August 2020, no. 34, 7-8 Foro amm. 1455 (2020); in general terms, on this subject, cf. M.L. Maddalena, *La digitalizzazione della vita dell'amministrazione e del processo*, 10 Foro amm. 2535-2556 (2016), institutional activity sees in digitalization a natural continuity of action imposed on it by law; more diffident, and one agrees with this approach, is the position taken by P. Piras, *Il tortuoso cammino verso un'amministrazione nativa digitale*, 1 Dir. inf. 43-55 (2020).

[61] In relation to healthcare, see S. Buoso, *Conciliazione dei tempi e continuità del servizio nella sanità*, 1 Lav. Dir. 51-69 (2020); F. Aperio Bella, *Tecnologie innovative nel settore salute tra scarsità delle risorse e differenziazione: alla ricerca di un equilibrio difficile*, 2 Federalismi 246-260 (2020); C. Bottari, *Profili innovativi del sistema sanitario* (2018) 34-45.

execution one.

However, as will be seen in section two of the survey, while dematerialization, on the one hand, promotes competition and thus facilitates users and administrations, on the other hand, there is a risk of systematic circumvention of competitive procedures, precisely because of the digital, immaterial and therefore 'unregulated' nature of such procedures.

Structural deconcentration may, however, lead to several risk areas, especially for users, who, in exchange for savings, may find a reduction in quality of services offered, obviously not in relation to essential public services. The tendency towards unrestricted accessibility (and therefore without controls) to public service markets entails inevitable risks, including in terms of judicial protection, which would seem to be thwarted by deregulation, but there are differing opinions on the subject.

Platforms conceal pitfalls for users, who may not find corresponding protection for a range of reasons, since competition, which tends to be unrestricted and therefore at risk of being unregulated, appears to be very much present in public services provided in digital form.

SECTION TWO: Health and transport services, possible scenarios of a digitally delivered service. Discontinuities and theoretical links with the ordinary legal regime

3. The national and regional health service: a permanently changing laboratory

In this second section of work, potential ways of systematically restructuring and rethinking public services due to digitalization are investigated, with reference to two strategic sectors, health and public transport, with some reference also to the pandemic and how it has or has not affected a path that seems to have been mapped out[62], but where there are still too many weak-

[62] A. Pioggia, *La lezione dell'epidemia di Covid-19 sul sistema sanitario e il suo ruolo*, Sp. Iss. Ist. fed. 17-22 (2020); with reference to tensions between pandemic and digitalization, cf. E. Sorrentino, *La sanità digitale in emergenza Covid-19. Uno sguardo al fascicolo sanitario elettronico*, 30 Federalismi 242-254 (2020); A. Pioggia, *Il decreto 'Rilancio'. Sanità e sicurezza [Speciale Covid-19]*, 5 Giorn. dir. amm. 561-567 (2020); on risk profiles and transposition into the digital space, see M.

nesses.

Application of new technologies, the use of constantly interconnected databases seems to acquire, in relation to the health service, peculiarities that allow to draw some important points of reflection and can bring improvements to a sector that in Italy has gone through several financial crises[63] - and whose consequences have been clearly visible precisely in the constant hustle and bustle of the administrative management of the pandemic - and that is in constant search of reforms and reference models to be inspired[64].

A digital rethink of the healthcare system implies investing in more efficient and transparent services, in new models of patient-oriented care, in long-term cost-savings for the healthcare system[65], and an adequate health system explained its importance during pandemic management, because a more efficient system imposed restrictive measures with less impact on the economy and the country system; at the same time, it means investing in a market that can act as a driving force for the nation's economic development[66].

D'Arienzo, *Problemi e prospettive del risk management nella sanità digitale: notazioni a margine della recente riforma della responsabilità medica*, in Vv. Aa. (eds.), *Scritti per Franco Gaetano Scoca* (vol. 1, 2020) 1415-1443.

[63] F. Saitta, *La nuova direzione delle Aziende sanitarie: piccoli passi verso un'autentica meritocrazia?*, 2 Dir. soc. 191-219 (2019); in a welfare perspective, cf. L. Torchia, *Sistemi di welfare e federalismo*, 4 Quad. cost. 713-740 (2002); the issue of the crisis in the Italian health sector is not recent, as demonstrated by the analysis carried out by F. Liguori, *Impresa privata e servizio sociale nella sanità riformata* (1996) 52-54, each health reform in Italian legal history has had to deal with inadequate organization and problems of financial achievement.

[64] In a cross-check perspective, see M. Arlotti, *Dati di sfondo. Il sistema sanitario italiano in prospettiva comparata*, 4 Pol. soc. 453 (2013).

[65] See M. D'Arienzo, *La salute ai tempi della "spending review": come conciliare il controllo della spesa sanitaria con l'effettività del diritto alla salute e della relativa tutela giurisdizionale*, 3 Dir. econ. 1083-1124 (2018), difficult balance between guaranteeing the service to be provided and spending limits.

[66] As noted during a meeting held in Rome in February 2016 (*Smart Health. L'innovazione digitale al servizio della salute*) on the topic of smart health in Italy, digital healthcare in Italy suffers from same critical issues that are faced by traditional healthcare, with a system fragmented from region to region and a constant battle with states of debt and economic crisis in the sector; on the issue, see L. Pinto, *Scenari eHealth: dalla dematerializzazione sanitaria all'approccio di cura "patient-centered"*, 1 San. pubbl. pri. 42 (2017), traditional e-healthcare system utilized by healthcare institutions all over the world is transitioning into a new

It should be noted that, already in 2014, Italy adopted the 'Pact for Digital Health' aimed at improving efficiency of national health service and implementation of a fair and sustainable health infrastructure system. These promises were punctually broken, and the vaccination campaign against Covid-19 shows once again that there is an administration that still thinks in paper form, records data on paper and then (eventually) transfers them to digital format.

In this survey there will be no mention of centralist or federalist tendencies, not because there would be no reason for it, there has already been mention of the need for centralism in order not to betray a digital uniformity[67] that already seems an unattainable objective.

Intuitively, health service plays a central role within reforms of a State, and for this reason a interconnected healthcare model can generate interesting considerations[68].

The implementation of a digital health model intercepts different issues that need to be addressed from two different perspectives.

The first is the perspective of the user, i.e. the patient, who relates to a completely interconnected and digital new healthcare system; from this point of view, the issue of privacy protection in consideration of the sensitive data involved when dealing with healthcare data is prevalent[69].

The second perspective is the one of firms that provide health services, in which values of competition[70] are involved,

interconnected and extended smart-healthcare system capable to solve undeniably complicated current situation of the healthcare sector.

[67] Cf. G. Pesce, *Digital first. Amministrazione digitale: genesi, sviluppi, prospettive* (2018) 10-12.

[68] See H. Dermikan, *A smart helathcare framework system*, 15 IT Prof. 38-41 (2018), a cost-effective and sustainable healthcare information system relies on the ability to collect, process, and transform healthcare data into information, knowledge, and action. However, in implementing such systems, healthcare providers face many complex and unique challenges.

[69] See R. Miccù, M. Ferrara, C. Ingenito, *La digitalizzazione dei servizi sanitari, il diritto alla salute e la tutela dei dati personali. Una introduzione*, 2 Federalismi 1-4 (2021) (Focus, La digitalizzazione dei servizi sanitari. Il diritto alla salute e la tutela dei dati personali); cf., also, M. Gola, *Brevi considerazioni sulla tutela della salute, tra etica e intelligenza artificiale: presente o futuro?*, in C. Bottari (ed.), *La salute del futuro. Prospettive e nuove sfide del diritto sanitario* (2020) 271-278.

[70] Cf. F. Liguori, *La concorrenza amministrata tra innovazioni legislative e resistenze*

with some specific features compared to other public services. Different ways in which public services are currently provided in Italy have to face the specificities of the health sector, where services provided are functional to right to health, constitutionally protected by Art. no. 32 Cost.

3.1 Digital perspective of health services, including sensitive data: the highest level of privacy protection

The perspective that requires a particular care on theme of a digital and interconnected management of health system is the one held by patients, whose health data, that are by their very nature sensitive, must be adequately protected in terms of privacy[71], an issue that is in antithesis with the one of continuous data management between public administrations (especially in the health sector).

It is opportune to operate a shared premise, according to which balance of interests (and in this part of the analysis, between efficiency of health system through interconnected databases and protection of patients privacy) cannot be solved by domestic law alone, because by its very nature the smart management of public services is a-territorial, and benefits and risks of this development have been previously analyzed (see *supra* par. § 2.3)[72].

In this respect, Regulation 2014/536/EU stated that the protection of citizens rights, safety, dignity and well-being takes precedence over other values, such as economic ones, in the field of clinical trials. This measure, if coordinated with the subsequent regulation designed to protect privacy, provides a general indica-

burocratiche, 7 San. Pubbl. 511 (1997).

[71] For a comprehensive analysis of data protection from a European perspective, see O. Lynskey, *The foundations of EU Data protection law* (2015) 43-47; from the perspective of Italian law, see, in the field of health and use of data, M. Falcone, *Le potenzialità conoscitive dei dati amministrativi nell'era della "rivoluzione dei dati": il caso delle politiche di eradicazione dell'epatite C*, 2 Ist. fed. 421-446 (2017).

[72] Cf. A. Barletta, *La tutela effettiva della privacy nello spazio giudiziario europeo e nel tempo della aterritorialità di internet*, 6 Eur. dir. priv. 1179 (2017); M.F. De Santis, *Ragionando su chi governa il mondo. Sabino Cassese e la global polity*, 6 Riv. it. dir. pubbl. com. 1463-1470 (2015); in a broader perspective, see S. Cassese, *Global standards for national democracies?*, 3-4 Riv. trim. dir. pubbl. 701 (2011); cf., in critical terms, M.R. Ferrarese, *Diritto sconfinato. Inventiva giuridica e spazi nel mondo globale* (2006) 66.

tion of the position of the European Union with regard to the protection of privacy with respect to other values, especially in the health sector[73].

It is undeniable that data and information circulation can be useful for treatment of diseases or for improvement of certain aspects of whole health service, as showed up by the Art. no. 47-*bis* of Decree Law 9 February 2012, no. 9 (converted, with amendments, into Law 4 April 2012, no. 35) according to which preservation of the medical report of the patient in digital form[74] can allow advantages in terms of accessibility; however, risks of an uncontrolled application of these technologies through which the use of health data could be used for profit or marketing purposes are also undisputed.

Another specific risk linked to an improper use of health data managed by interconnected databases are ones linked to a state of discrimination to which patients may be subject, related to the disease[75].

[73] S. Rodotà, *Il diritto di avere*, cit. at 54, 396, use of new technologies in the field of health experimentation requires the use of user data, which highlights the need to balance individual rights with the remarkable economic interests involved; L. Chieffi, *La tutela della riservatezza dei dati sensibili: le nuove frontiere europee*, 1 Federalismi 6 (2018), national and European law have a duty to guide the use of these new technologies to bring their use more closely into line with the rights of individuals; in general terms, see A. Paltrinieri, *Sanità e internet*, 6 Ragiusan 590-596 (2003); S. Battini, G. Vesperini, *Profili di tutela dell'utente nel settore sanitario*, 6 San. Pubbl. 637 (1997), on the subject of profiles of tusers protection within health service provision;.

[74] Please refer to L. Califano, *Fascicolo sanitario elettronico (FSE) e dossier sanitario. Il contributo del Garante privacy al bilanciamento tra diritto alla salute e diritto alla protezione dei dati personali*, 1 San. pubbl. pri. 12 (2015), Electronic Health File (*FSE* in Italian) is the tool through which citizens can trace, consult and share their health history. The *ESF* manages all the data and digital documents of a health and social-health nature generated by present and past clinical events of the patient. It has a time horizon that covers the entire life of the patient and is constituted, with prior consent, by the Regions and Autonomous Provinces for the purposes of prevention, diagnosis, treatment and rehabilitation pursued by the subjects of the National Health Service and the regional health and social services that take care of the patient; R. Acciai, *La tutela della privacy ed il S.s.n.*, 1 Ragisan 20 (2003); P. Guarda, *Ok Google, am I sick?: Artificial Intelligence, E-Health and Data Protection Regulation*, 1 Riv. Biodir. 359-378 (2019).

[75] Cf. A.L. Hoffman, *Where fairness fails: data, algorithms, and the limits of antidiscrimination discourse*, 22 Inf. Com. tech. 900-915 (2019); D.T. Young, *How do*

The increasing use of IT tools by all healthcare professionals to support all (or almost all) electronic treatment pathways and greater interoperability of data raises sensitive issues, such as the need to protect such records from misuse by a variety of actors.

In 2016, National Bioethics Committee drew a document in which it stated, in view of appropriate use of data, that it is necessary to define responsibility of provider and verify the quality of the data and transparency of algorithms used, because use of data, from the perspective of the patient, can bring about significant innovations in the medical field[76].

The whole issue related to patients privacy in terms of digital and interconnected health care, must take into account that the concept of e-health which contains many different tools, the use of which endangers the right to privacy at different intensities[77].

Difficulty in identifying individually the e-health devices that could undermine value of privacy, European legislator has chosen to operate from another perspective, namely from the widening of the notion of health data.

In this sense, recital no. 35 of Regulation 2016/679/EU states that personal data concerning health "should include all data pertaining to the health status of a data subject which reveal

youmeasure a Constitutional moment? Using algorithmic topic modeling to evaluate Bruce Ackerman's theory of Consititutional change, 122 Yal. L. Jour. 122-131 (2013).

[76] Comitato Nazionale per la Bioetica, *Tecnologie dell'informazione e della comunicazione e Big Data: profili bioetici*, avaiable at www.bioetica.governo.it (2016) 7-10, in particular, relevant development paths in the field of health are outlined with the so-called 'Data-driven precision medicine', i.e. the possibility – which is still the subject of study and research and at the moment cannot be extended to all aspects of biology and medicine – to build on the basis of the amount of data collected predictions and simulations of diagnosis and treatment for individual patients in specific contexts or for stratified groups of patients, but also possibly extended to the definition of health policies for public health, in particular preventive type of preventive medicine or precision medicine, but also possibly extended to the definition of public health policies; in the opposite direction, on the possible failures of this system, see P. Savona, *Administrative Decision-Making after the Big Data Revolution*, 19 Federalismi 19-21 (2018), "In data mining and data matching decisions (also named data-driven decisions) the inputs may be a relevant source of errors as well, since such decision result from the processing of large amounts of unverified data, which may easily be incorrect".

[77] For a survey of these tools, see L. Chieffi, *La tutela della riservatezza dei dati sensibili: le nuove frontiere europee,* cit. at 73, 8-11.

information relating to past, current or future physical or mental health status of data subject. This includes information about natural person collected in the course of the registration for, or the provision of, health care services[78]".

The position of European legislator appears evident, since it extends concept of health data to any element capable of revealing the state of health of individuals in order to protect the subject from external interference.

However, on the other hand, use of health data can lead to clear improvements in treatment of diseases, in definition of appropriate strategies by state health government bodies, to implement a whole digitalized management of the health system, both at European, national and local level. Obviously, and again management of Covid-19 revealed this criticality, data input was sometimes incorrect, sometimes there was a suspicion that the data was not reliable because it had been altered, resulting in an obvious continuous rush[79].

[78] Moreover, recital no. 35 includes among the health data, and consequently particularly sensitive, "a number, symbol or particular assigned to a natural person to uniquely identify the natural person for health purposes; information derived from the testing or examination of a body part or bodily substance, including from genetic data and biological samples; and any information on, for example, a disease, disability, disease risk, medical history, clinical treatment or the physiological or biomedical state of the data subject independent of its source, for example from a physician or other health professional, a hospital, a medical device or an in vitro diagnostic test". The Regulation also refers to the genetic data defined in recital no. 34 as follows, "Genetic data should be defined as personal data relating to the inherited or acquired genetic characteristics of a natural person which result from the analysis of a biological sample from the natural person in question, in particular chromosomal, deoxyribonucleic acid (*DNA*) or ribonucleic acid (*RNA*) analysis, or from the analysis of another element enabling equivalent information to be obtained"; genetic data are ultra-sensitive and require enhanced protection and the balance in terms of access to such information can only be achieved with a imminent public health or safety concern; please refer to C. Fanuele, *Il regolamento attuativo della banca dati nazionale del DNA: nuove garanzie e persistenti vuoti di tutela*, 1 Proc. pen. Giust. 11 (2017); E. Stefanini, *La circolazione dei dati genetici tra vecchi diritti e nuove sfide*, in C. Casonato, C. Piciocchi, P. Veronesi (eds.), *I dati genetici nel biodiritto* (2009) 112-115; P. Fattorini, C. Previderè, *La complessità in genetica-forense: l'analisi di DNA in limitata quantità ("Low Copy Number DNA") e l'interpretazione di tracce commiste*, 1 Riv. it. Med. Leg. 179-182 (2016).

[79] On critical aspects during Covid, also in relation to privacy issues, see F. Vari, F. Piergentili, *"To no other end, but the..safety, and public good of the people": le limi-*

The balance between values involved is not easy and it would be necessary to make an analysis by categories of data, because even the expression 'health data' is too vague and generic. However, it is possible to try to identify some cardinal points in a field that is constantly evolving and for this reason unstable in terms of achieved balances.

In this respect, Italian Privacy Guarantor has provided interesting and useful guidelines for the analysis carried out.

First of all, already in 2016, Privacy Guarantor established that the use of health data through ICTs must be carried out reducing to a minimum the invasive effects on personal sphere, in compliance with the principles of purpose, necessity, proportionality and not excess[80].

In this measure, the privacy protection authority states that health data can be managed through computer systems in accordance with the four parameters mentioned. A cross-reference of these parameters makes it possible to state that it is necessary to demonstrate that the re-use of health data can lead to results (in any field) that would not be achievable without them[81].

tazioni alla protezione dei dati personali per contenere la pandemia di Covid-19, 1 Rivista AIC 328-334 (2021); A. Lucarelli, *Costituzione, fonti del diritto ed emergenza sanitaria*, 2 Rivista AIC 558-569, 571 (2020); C. Bergonzini, *Non solo privacy. Pandemia, contact tracing e diritti fondamentali*, 2 Dir. fond. 704-714 (2020); F. Filosa, *Il diritto alla privacy nello stato di emergenza. Riflessioni sull'applicazione della telemedicina quale possibile tecnologia per contrastare la diffusione del Covid-19*, 2 Dir. fond. 847-869 (2020); E. Calò, *Perché l'emergenza sanitaria dell'epidemia Covid-19 è anche un'emergenza giuridica*, 3 Notar. 258-260 (2020); S. Whitelaw et al., *Applications of digital technology in Covid-19 pandemic planning and response*, 4 Lancet 435-440 (2020).

[80] Garante Privacy, aut. 15 December 2016, no. 8, register of provisions no. 530/2016, avaiable at www.garanteprivacy.it (2016), with regard to genetic data, there is a ban on dissemination for research purposes, which is only allowed in aggregate form or in a manner that does not make the data holder recognizable; see L. Califano, *Il trattamento dei dati genetici: finalità di ricerca, esigenza di sicurezza e diritto alla protezione dei dati personali*, in Vv. Aa. (eds.), *Cultura giuridica e diritto vivente* (2017) 4-8; S. Rodotà, *Dati genetici: un piano per rafforzare la tutela*, avaiable at www.garanteprivacy.it (2004), genetic data, apart from requiring reinforced protection because of their very delicacy, pose very particular management and collection problems. Behind the increase of genetic tests and the exponential growth of this type of analysis there is the strong pressure of commercial interests from market and it is necessary to develop a strong social awareness in order not to risk serious consequences for privacy.

[81] Please refer to the authoratative position held by S. Rodotà, *Privacy e costru-*

More recently, the Privacy Guarantor has provided essential guidance on the discipline for the treatment of health data under Regulation 2016/679/EU.

In particular, it is stated that the treatment of health data is allowed for reasons of relevant public interest on the basis of Union or Member State law, for reasons of public interest in the field of public health[82] and for the purpose of preventive medicine, diagnosis, health or social care or therapy or the management of health or social systems and services (i.e. treatment purposes).

In these hypotheses, balance is operated in direction of allowing data to be processed, since need to ensure re-use is prevalent compared to the protection of privacy, even if in such a delicate field as health data.

Apart from the three hypotheses described above, in which processing of data can be carried out without the consent of the individual, there are other cases in which processing is permitted but is subordinate to the consent of the private individual[83].

Specifically, for the issue of smart management of health care, this category includes treatments connected to the use of medical Apps, through which independent owners collect data, including health care data of the person concerned, for purposes different from the so-called 'telemedicine'.

From this point of view, it seems that both the European legislator and the National Privacy Guarantor have preferred to protect privacy with respect to the development of digital (i.e.

zione della sfera privata. Ipotesi e prospettive, 3-4 Pol. dir. 534-541, 544 (1991); insights are also provided by *Data Protection Commissioner vs. Facebook Ireland Ltd*, 134 Harv. L. Rev. 1567 (2021).

[82] This means protection against serious cross-border threats to health or ensuring high standards of quality and safety of healthcare and of medicinal products and medical devices, on the basis of Union or Member State law providing for appropriate and specific measures to protect the rights and freedoms of the person concerned, in particular professional secrecy.

[83] L. Aulino, *Consenso al trattamento dei dati e carenza di consapevolezza: il legal design come un rimedio ex ante*, 2 Dir. inf. 303-312 (2020), patient consent is necessary for treatments aimed at customer loyalty in order to benefit from services or ancillary services, related to the pharmaceutical and health sector, additional to the activities of pharmaceutical assistance traditionally carried out by public and private territorial pharmacies within the National Health Service, for treatments carried out in the health field by private legal entities for promotional or commercial purposes, for treatments carried out by health professionals for commercial or electoral purposes.

smart) management models of health data.

The question is clearly wide-ranging and difficult to define in a theoretical way, since it would be necessary to carry out a case-by-case analysis. However, it is appropriate to try to set some minimum features, the cardinal points within which to confine the reflections.

Using of data (and, in the case analysed, of health data) to be used as the basis for the improvement of health system in its various aspects (research, provision of health services, efficiency of the system) has found in the development of technologies a formidable support; these continuous evolutions have induced the legislator (both European and Italian) to pass from a static protection of the right to privacy, to a dynamic protection[84], which must change quickly to be able to adapt itself to social and technological changes that can undermine the right to confidentiality of citizens.

Authoritative scholars of Italian public law, in support of the protection of privacy have attempted to amplify the notion of informational self-determination of the individual through the use of the notion of human dignity[85]. Moreover, these dating but shareable interpretations have been incorporated into various legislative texts, as evidenced by Art. no. 1 of the EU Charter of Fundamental Rights, which was later incorporated into the Treaty of Lisbon.

Application of the principle of human dignity highlights the interpretative impulse to protect the rights of the person (specifically privacy) against sources of discrimination and danger from which a violation of the principle of equality could derive, presided over by Art. no. 3 of Constitution.

Argumentative paths just outlined does not open the door to interpretations or balances other than the one that emphasize the protection of the value of privacy, especially by virtue of the reference to Art. no. 3 and the principle of equality.

On the basis of this analysis, there is no balance to be made, because the right to self-determination of the individual in order

[84] Please refer to T.E. Frosini, *Liberté, Egalité, Internet* (2015) 12-22.

[85] See the resarch made by G.M. Flick, *Elogio della dignità (se non ora, quando?*), 4 Pol. dir. 530 (2014); A. Ruggieri, A. Spadaro, *Dignità dell'uomo dell'uomo e giurisprudenza costituzionale (prime annotazioni)*, 3-4 Pol. dir. 344-351 (1991); L. Chieffi, *La tutela della riservatezza dei dati sensibili: le nuove frontiere europee,* cit. at 73, 23-26.

to protect him from states of subjection and degradation due to the diffusion of data that reveal the most intimate characteristics must be fully protected.

The relationship that is identified between the protection of privacy and human dignity as a constitutionally guaranteed value cannot be compromised by any other requirement, since maintenance of control of data flow is linked to primary constitutional values, such as the principle of equality, inviolable and not susceptible to be compressed.

However, it should be noted that this interpretative approach is a principled one and may be subject to derogations in individual cases where the right to confidentiality has been sacrificed in balancing other values[86].

Currently, and this speech seems to be valid both for European and Italian context, there are no legislative and organizational conditions (regarding tools of public administration) to implement a smart management of health, which can manage health data for an overall improvement of the health service.

Right to confidentiality of data as sensitive as health ones does not allow balances with other values, such as the improvement of the health service or research for treatments of unidentified diseases. The right to privacy of health data is guaranteed by Art. no. 3 of the Constitution, which guarantees individuals sovereignty and self-determination over the use of their own sensitive data, as authoritatively defined as electronic self-determination[87].

Attempts aimed at restricting access to sensitive data only

[86] Please refer to T.A.R. Emilia-Romagna, Bologna, Sec. I, 20 November 2017, no. 760, 11 Foro amm. 2300 (2017), right to access prevails over right to confidentiality, even if requests for disclosure concern documents relating to so-called ultra-sensitive data, such as, for example, those to disclose the state of health of the subject to whom the request for access is addressed, in the event that the interest that moves the applicant for access is at least equal in rank to that of the subject who intends to keep his own data confidential.

[87] S. Rodotà, *Il mondo nella rete. Quali diritti, quali vincoli* (2014) 33-37; in the opposite direction, please refer to S. Baker et al., *Internet of things for smart healthcare: technologies, challanges and opportunities*, 99 IEEE Access 3 (2017), "there are relatively few disadvantages of remote health monitoring. The most significant disadvantages include the security risk that comes with having large amounts of sensitive data stored in a single database", but "as progress continues to be made to reduce the disadvantages, IoT-based systems for remote health monitoring are becoming an increasingly viable solution for the provision of healthcare in the near future".

for medical and therapeutic needs or in a state of need related to public health reasons, through encrypted forms or authentications that separate health data from personal data, should be accompanied by a specific discipline.

In conclusion, it seems appropriate to try to draw some critical input, with the necessary warning that the continuous and sudden mutability of the theme makes it difficult to establish unchangeable criteria.

It may be unnecessary to try to outline possible solutions in a abstract way, as it is appropriate to assess the possibility of managing health data according to the objectives to be achieved, which may differ one from another, such as medical research requirements, the management of the public health service or even requirements for judicial protection.

Recital no. 52 of Regulation 2016/679/EU states that "derogating from the prohibition on processing special categories of personal data should also be allowed when provided for in Union or Member State law and subject to suitable safeguards, so as to protect personal data and other fundamental rights, where it is in the public interest to do so, in particular processing personal data in the field of employment law, social protection law including pensions and for health security, monitoring and alert purposes, the prevention or control of communicable diseases and other serious threats to health. Such a derogation may be made for health purposes, including public health and the management of health-care services, especially in order to ensure the quality and cost-effectiveness of the procedures used for settling claims for benefits and services in the health insurance system, or for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes".

The part of recital which provides for the management of health data for "health purposes, including public health and the management of health-care services, especially in order to ensure the quality and cost-effectiveness of the procedures" seems to make an indirect reference to a smart management of the health service based on personal data.

It is necessary to be prudent on this issue, since, on the one hand, the European regulation aimed to standardise European legislation on the processing of sensitive data (and specifically health data), and, on the other hand, the Italian legislator, assisted

by the guarantor of privacy, had already arrived at an advanced model of protection.

An hypothesis of a totally smart and wired healthcare system management model, which can bring improvements both in the management of healthcare treatments and in the governance of the public healthcare service itself, seems still far from being outlined, since to date the protection of such data from abuse and interference by private individuals (e.g. from profit-making companies) must be a priority.

3.2 Digital health services, role of administrations and business attitude: free competition and benefits for the entire system

Conclusions just drawn regarding the re-use of health data (and therefore sensitive) of users in order to hypothesize a model of smart management of health service cannot be used in the construction of an interconnected health care network, from the perspective of the administrations and companies that provide health services[88].

However, conclusions reached in the first part of this analysis regarding quality of services to be provided to citizens, find in essential services, such as the health service, a particular declination with precise obligations and precise declination of users' rights.

Main research trace for lawyers moves from the relationship between the user and health data, ultra-sensitive by nature, and moves into the perspective of the provision of health service, in the perspective of the relationship between administration, business and patient, which remains the final receiver, involving issues such as free competition, equal treatment between economic operators, but always in relation to a particular public service, which has undergone numerous reforms over years, but which here must be analyzed from a renewed perspective, to try to identify a legislative path for the provision in smart form of certain health services, analyzing the critical issues raised by this

[88] Cf. C. Acocella, *Modelli organizzativi e gestionali dei servizi sociali e sanitari e logiche di mercato*, in F. Liguori, C. Acocella (eds.), *Liberalizzazioni. Isituzioni, dinamiche economiche e lavoro nel diritto nazionale ed europeo* (2015) 63-69; C. Miglioli, *La dimensione europea della sanità, fra integrazione e confini nazionali*, 2 Riv. it. pol. pubbl. 147-155 (2009).

landing, so far still only hypothetical.

Management of an interconnected public service, based on data released by companies that provide same services, raises completely different issues, which must be addressed in accordance with the rules on the award and disbursement of public services (health, in this case) and necessary protection of free competition.

In this sense, Big Data analytics is also used in market regulation; the so-called cognitive regulation is a particular type of regulation based on the processing, with methods of Big Data analytics, of the opinions and behaviours of market operators and that, improving the knowledge of independent authorities, allows them to choose soft regulatory options, which do not impose behaviour, but try to induce market operators to assume certain on the basis of the evaluation of such data[89].

In addition, to making general or timely decisions, Big Data analytics is also used in public administrations to improve the efficiency and effectiveness of the services they provide, both from an organizational point of view and from a performance point of view, particularly within health services[90].

In this analysis, not all issues related to the management and provision of health services can be investigated, but specific references will be made to circumstances that must be analyzed according to the main line of research. In this sense, it seems appropriate to try to delineate the theme and analyze current forms that can be considered models of digital health care and verify their compatibility with some key aspects of Italian administrative law.

Before investigating central issue of digital management of the health service as a whole, it is necessary to make two necessary preliminary remarks.

First of all (and this also applies to what will be said in rela-

[89] Please refer to M. Ramajoli, *"Regulation by information": diffusione della conoscenza del rischio e incertezza scientifica*, 2 Giorn. dir. amm. 201-211 (2020); B. Guy, *Governance without government? Rethinking public administration*, 8 Journ. Pub. Ad. Theo. 223-243 (1998).

[90] B. Bekermeier, *Challengers and lessons learned in promoting adption of standardized local public health service delivery data through the application ofthe Publc Health Activities and Services tracking model*, 26 Journ. Amer. Med. Inf. Ass. 1660-1663 (2019).

tion to the public transport sector), public services sector in Italian legal system is, as noted in an authoritative manner, unstable[91], since it is characterised by continuous legislative changes that do not allow permanent solutions to be found. In this report, it is not possible to account for such a complex and articulated issue, which requires targeted and articulated analyses. The current situation has been made even more unstable by pandemic disease Covid-19, for which there are temporary derogations, *ad hoc* rules, which have also had a major impact on public services.

The choice linked to the survey of Italian health system is explained by several reasons[92].

Before all else, because the health service plays an intuitive central role in the development of any legal system, for the primary needs to which it responds and for the high cost of the organization[93]. An essential service, in the Italian context continually subjected to economic pressures and changes in management on the basis of political choices. Pandemic, perhaps in the excesses of management, has shown this to be the case.

Secondly, because health sector has been the testing ground for many reforms adopted in field of Italian public administration, even though these choices have often been characterised by a

[91] The adjective unstable was used by F. Merusi, *I servizi pubblici*, cit. at 36, 34-41.

[92] See A. Pioggia, *Di cosa parliamo quando parliamo di diritto alla salute*, 1 Ist. fed. 293-299 (2013), right to health in Italian system, since its constitutional sanction, has been placed as a site of intersection between different pressures, involving the person and his relationship with the medical professional, with the administration, with society, which affect the relationship between business and workers rights, concerning the choices of allocation of public resources, decisions on the organization of the administration, individual freedom and responsibility. For this reason it is a right that is more affected than others by social, cultural and legal changes and that stimulates a continuous confrontation on its nature and its content, which evolves not only with the science that deals with it, but also and especially with the society in which it settles.

[93] In this respect, the following considerations are current G.M. Racca, *La professionalità nei contratti pubblici della sanità: centrali di committenza e accordi quadro*, 9-10 Foro amm. CDS 1727-1735 (2010), there is a widespread belief that the costs of the national health service must be reduced and to ensure high levels of health protection and address new expenditures a profound rationalization of health spending as a whole is necessary; cf. F. Merusi, *I servizi pubblici negli anni '80*, in *Il diritto amministrativo degli anni '80. Atti del XXX Convegno di Studi di scienza dell'amministrazione, Varenna - Villa Monastero 20-22 settembre 1984* (1987) 151-155, the right to provision of a health service is not absolute, but is financially conditioned.

good deal of improvisation[94]. Public services have been the workshop for federalist, centralist, public spending and differentiated management experiments, which have not always been successful, with all the criticalities that emerged clearly during the management of the Covid-19 pandemic emergency.

Demand and supply of health services historically reveal in the Italian experience an inefficient market model that requires the intervention of public authorities[95].

Dealing with innovation in relation to health purchasing policy means balancing a number of principles that are difficult to combine[96]. The whole analysis carried out must take into account the expenditure limits imposed at both national and European

[94] Cf., in relation to a very specific circumstance from which fundamental elements and interpretations can be derived, F. Bosetti, *Stato, carità solidarietà nella storia della protezione dalle malattie contagiose*, 10 Giur. it. 2302-2309 (2020); G. Pagliari, *Libertà, autonomia privata e utilità sociale. Una riflessione problematica*, in G. Leone (ed.), *Scritti in memoria di Giuseppe Abbamonte* (vol. 2, 2019) 1123-1131; G. Greco, *Servizi sociali e disciplina della concorrenza: dalla esclusione alla (possibile) eccezione*, 5-6 Riv. Dir. comm. Int. 822-825 (2015); S. Civitarese Matteucci, *Servizi sanitari, mercato e modello sociale europeo*, 1 Merc. Conc. reg. 179-185, 189-194 (2009); G.F. Cartei, *Servizi sociali e regole di concorrenza*, in Vv. Aa. (eds.), *Studi in onore di Leopoldo Mazzarolli* (vol. 2, 2007) 253-261, the social term of the service can serve as a parameter for controlling and reviewing the value of competition, both from the perspective of the administration and of the company; A. Romano Tassone, *L'azienda sanitaria tra democrazia e tecnocrazia*, 4 San. pubbl. 389 (1997); F. Liguori, *Impresa privata e servizio sociale nella sanità riformata*, cit. at 63, 246; G. Cazzola, *Lo stato sociale tra crisi e riforme: il caso Italia* (1994) 150-159; G. Rossi, *Enti pubblici associativi. Aspetti del rapporto tra gruppi sociali e pubblico potere* (1979) 53-58.

[95] For a dated but current analysis on the subject, please refer to I. Ciolli, *La salute come diritto in movimento. Eguaglianza, universalismo ed equità nel sistema sanitario nazionale, oggi,* 2 Biol. Journ. 13 -33 (2019), one of the major failures, not yet resolved, concerns fragmented financing of the health service. The results achieved with the various reforms are partial and unsatisfactory, as they were achieved with short-sighted health policies that were not aimed at long-term analysis; T. Frittelli, *Spunti di riflessione sul sistema di finanziamento del Servizio Sanitario Nazionale*, 21 Federalismi 1-16 (2018); M. D'Angelosante, *Strumenti di controllo della spesa e concorrenza nll'organizzazione del servizio sanitario in Italia* (2013) 81-167.

[96] L. Giani, *Spunti per la costruzione di una cultura dell'innovazione negli appalti in sanità*, 2 Nuove Aut. 205-221 (2018), reforms in the healthcare sector in Italy have been drafted in the prism of rationalization, constantly seeking a balance between healthcare provision in compliance with Art. no. 32 of the Constitution and budget stability.

level.

As clearly reported, "e-healthcare may be defined as the health care practice supported by electronic devices and communication, including a broad range of health care systems such as electronic medical records (*EMR*), electronic prescriptions (*EPS*), healthcare knowledge management (*HKM*), and remote monitoring. Its implementation in medical care is essential for high quality and cost-effective healthcare services, prevention of medical errors, improving healthcare staff performance and physician efficiency, and a better physician-patient relationship[97]".

Before dealing with the problematic issues related to the subject under investigation, it is appropriate to give an account of different tools that can be used in smart healthcare. The analysis will be limited to digital healthcare tools that can bring improvements to entire service governance, without taking into account technologies that start from the patient's data and are aimed at more properly therapeutic purposes.

The topic concerns different models of *PSS* (Product System Service), that refer to an integrated product and service offering that delivers value in use, where both the product and the service are considered as one single offering. *PSS* models are based on a service offered on the basis of results-oriented and patient-oriented principles, a service provided from bottom up, starting from users needs[98].

[97] D. Miorandi, S. Sicari, F. De Pellegrini, I. Chlamtac, *Internet of things: vision, application and research challanges*, (conference paper) (2012) 4-8, "the real-time data acquisition from the physical world will lead to the introduction of various novel business services and may deliver substantial economic and social benefits. In healthcare IoT technology makes possible to collect data from smart items anywhere and anytime facilitating better decision-making capabilities focused on empowering patients in prevention and treatment of disease. IoT may bring a wide range of opportunities and benefits to healthcare system improving quality of care tracking patient's daily activities, food intake, and physiological parameters helpful for medical diagnoses, treatment regimens and medical care. Thus, improves efficiency while reduces cost".

[98] D. Opresnik, *Information. The hidden value of servitization* (2013) 49-55, an important feature of smart items lie in their capability to enhance informatization i.e. information which can be exploited and transmitted through servitization, or what is the same information as a service; T.S. Baines et al., *State of the art in product-service systems. Proceedings of the institution of mechanical engineers*, 10 Jour Mech. Eng. 1543-1564 (2013) this term refers to a major business transformation where companies 'shift' from selling products to selling an integrated

The first e-health tool, also in terms of impact, is *WSN* (Wireless Sensor Network), an intelligent network application system that autonomously collect, integrate and transmit data by incorporating latest technological achievements in micro-electronics, network and communications.

Beyond the execution modalities of this model, its implementation may bring important benefits for healthcare staff such as timely information, information accuracy, system usability (i.e. confident in performing), reduced costs, and high user satisfaction followed by a higher quality of service perceived by patients[99].

Another model that can be traced back to the pattern of *PSS* is *RFID* (Radio Frequency IDentification), which utilizes radio waves for collecting and transferring data, with the capability of sending and receiving information without human involvement. This technology has been widely adopted on the Supply Chain Management (*SCM*) domains mostly for logistic services[100].

Apart from *PSS* models, one template to analyze is cloud computing, "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction[101]". This new paradigm is transforming rapidly the way IT infrastructure is being delivered and consumed offering users and businesses computing resources designed and governed in form of services, reclassifying IT from an expensive capital expenditure to a pay-as-you-go operating expenditure, where the Cloud Service Provider (*CSP*) is the one who maintain and manage all comput-

combination of products and services that deliver value in use.

[99] For an economic analysis of health services (specifically on the Grossman model), cf. M. Grossman, *On the concept of health capital and the demand for health*, 80 Jour. Pol. Ec. 223-227 (1972).

[100] It was primarily adopted by healthcare institutions for the elimination of paper-based mechanisms, reduction of medical errors, and patient waiting time. Over time, its usage spread vastly towards new services such as inpatient drug delivery, blood identification, and equipment tracking. Its adoption have also extended the scope of healthcare services, nowadays is possible to use smartphones with *RFID*-sensor capabilities as a platform for monitoring of medical parameters, a new technological branch of e-Health now commonly referred to as m-Health.

[101] P. Mell, T. Grance, *Effectively and securely using the cloud computing paradigm* (2nd ed., 2009) 44-56.

ing resources that are offered to the end user under form of services, relieving end-users from acquiring and hosting hardware and software resources.

In other words, "by adopting cloud computing healthcare institutions may focus more on increasing quality of delivered healthcare instead of managing their own IT, reducing or even eliminating the high-cost of technical departments to support and operate the in-house infrastructures".

The new e-healthcare landscape empowered by integration of *WSN-RFID* items and cloud computing allows to collect, process, and store high volume of sensitive patient information on a timely basis. Once collected, healthcare institutions may use informations provided in form of health parameters to enhance existing services and offer new ones. This type of services is called embedded or these services, and are successful at creating a competitive advantage, and accelerating service innovation[102].

Beyond the differences between two patterns outlined (*PSS* and cloud computing), the new e-healthcare landscape empowered by the integration of *WSN-RFID* items and cloud computing allows to collect, process, and store high volume of sensitive patient information on a timely basis. Once collected, healthcare institutions may use the information provided in form of health parameters to enhance existing services and offer new ones. This type of services is called embedded or smart services, and are successful at creating a competitive advantage, and accelerating service innovation.

After having outlined these institutions as digital health care models, not in an exhaustive manner, it is necessary to assess the profile of compatibility with general principles of Italian administrative law in terms of entrustment and management of the health service. Obviously, in this study it is not possible to carry out a complete review of such a vast subject from a legal literature point of view as the entrustment of health services, but it is outlined a key to provide some food for thought based on determined specific aspects.

It should be noted that the term health service includes a

[102] On this subject, in general terms, including on public service parameters and related quality of service offered to users, cf. G. Sgueo, *Punteggi, classifiche, premi: è possibile giocare con le politiche pubbliche?*, 2 Riv. trim. dir. pubbl. 591-611 (2019).

very high number of services, including for example medical transport, cleaning and security service, the canteen service. Following remarks do not take into account the differences between the different services to be entrusted, but look at health system as an essential service as a whole, to be provided to the user.

The public interests that arise in a potential model of renewed idea of healthcare system are several, but are not dissimilar from those that emerge in the management of the public service provided in the traditional way but perhaps need to be balanced in a different way.

Firstly, the health service must be provided in accordance with the provisions of Art. No. 32 of the Constitution, which protects health not only as a fundamental right of the individual, but as an interest of the community[103].

Secondly, and closely linked to the issue of health protection referred to in referred Art. no. 32, there are the essential levels of care (namely *LEA*), i.e. the minimum standards of assistance that the health service must guarantee[104]; compliance with these levels must be respected regardless of the mode of delivery of the public service chosen.

Of course, the value of the optimal performance of service

[103] In a classical meaning on the subject see C. Mortati, *La tutela della salute nella Costituzione Italiana*, 1 Riv. mal. Inf. Prof. 2 (1961) 2, now in *Scritti. Problemi di diritto pubblico nell'attuale esperienza costituzionale repubblicana* (vol. 3, 1972); F. Bocchini, *Salute e sanità tra solidarietà e responsabilità*, 1 Contr. impr. 126-132 (2018); C. Bottari, *Il diritto alla tutela della salute*, in P. Ridola, R. Nania (eds.), *I diritti costituzionali* (vol. 2, 2006) 1100-1121; B. Pezzini, *Il diritto alla salute: profili costituzionali*, 1 Dir. soc. 21-24 (1983); M. Luciani, *Il diritto costituzionale alla salute*, 4 Dir. soc. 769 (1980); M. Bessone, E. Roppo, *Diritto soggettivo alla salute, applicabilità dell'art. 32 Cost. ed evoluzione della giurisprudenza*, 4 Pol. dir. 766-771 (1974).

[104] See www.salute.gov.it/portale/lea (2017), Decree of the President of the Council of Ministers issued on 12 January 2017 established the minimum levels of medical care to be guaranteed, defined the activities, services and performances guaranteed to citizens with the public resources made available to the National Health Service and above all divided three main levels to be respected. The first level corresponds to collective prevention and public health, the second level corresponds to district assistance, i.e. healthcare and social services spread throughout the territory and the third to hospital activity. In order to ensure the continuous, systematic updating, on clear rules and scientifically valid criteria, of the essential levels of care, the National Commission for the updating of the *LEAs* and the promotion of appropriateness in the National Health Service has been established.

and respect for the value of free competition are in evidence. These values, of course, refer to the complex relationship between administration and market[105] - because interposition of data collection and processing tools operated by private parties requires a redefinition of standards - which could be interpreted differently, since a digital handling of the health service would involve a less invasive role of the administration[106].

In conclusion, it emerges interests of private subject to protect data held by private companies, a sort of right to privacy of corporate companies that can be declined in different rights, such as, for example, the right to the protection of the industrial secret[107].

In this sense, it is possible to share the leading reflection according to which there are certain social values that must induce the administration to adopt certain corrective measures for the market[108], that must follow its own rules.

[105] The subject has been addressed by many authoritative scholars of public law, without pretending to be exhaustive, it is mentioned the contributions that have had a decisive impact on the investigation, F. Trimarchi Banfi, *Il principio di concorrenza: proprietà e fondamento*, 1 Dir. amm. 15-28 (2013), the achievement of competitive conditions increases efficiency, public interventions can distort the functioning of markets in a negative sense. The contrast between economic growth and equity expresses the relationship between the way in which the public powers act and effects in terms of growth; M. D'Alberti, *Poteri pubblici mercato e globalizzazione* (2008) 69-74; A. Police, *Tutela della concorrenza e pubblici poteri: profili di diritto amministrativo nella disciplina antitrust* (2007) 2-11; U. Pototschnig, *Poteri pubblici e attività produttive*, 1 Dir. econ. 40-44 (1990); M. D'Alberti, *Libera concorrenza e diritto amministrativo*, cit. at 28, 350; G. Corso, *Riflessioni su amministrazione e mercato*, cit. at 35, 4; S. Cassese, *Stato e mercato, dopo privatizzazione e deregulation*, 2 Riv. trim. dir. pubbl. 378-390 (1991).

[106] Please refer to R. Chieppa, *Tutela della salute e concorrenza*, 1 San. pubbl. pri. 5-7 (2017); again with reference to vaccination status, see R. Danelli, *In attesa di un vaccino per il Covid-19: una valutazione del peculiare rapporto tra vaccini e diritto della concorrenza*, 3 Eurojus 202-217 (2020).

[107] The very definition of industrial secret is a difficult task for the jurist, for a detailed analysis please refer to A. Andolina, *Tutela delle liste clienti tra concorrenza sleale, segreto industriale e banche dati*, 5 Giur. it. 1146-1151 (2018); E. Arezzo, *Protezione del segreto e tutela del software: convergenze, sovrapposizioni, conflitti*, 1 Dir. indust. 145-151 (2018); M. Libertini, *Le informazioni commerciali riservate (segreti commerciali) come oggetto di diritti di proprietà industriale*, 3-4 Dir. indust. 566-570 (2017); L.C. Ubertazzi, *Riservatezza informatica ed industria culturale*, in Vv. Aa. (eds.), *I diritti d'autore e connessi. Scritti* (2003) 136-141.

[108] G. Amato, *Il mercato nella Costituzione*, cit. at 35, 9.

The theme, in these terms, is placed in a perspective only potential and abstract even if in other systems have successfully tested the possibility for medical devices to use big data to make more efficient the use of ambulances during emergencies within a given territory. Through historical data on the profiles that most often require ambulance intervention, meteorological data or demographic data it is possible to make projections on the demand for ambulances in the long run.

Health service as a whole is made up of many different public services which together are aimed at the functioning of public health; here there is no reference to any particular service but there is an attempt to carry out general reflections.

The opportunity to provide the health service in a new and networked form must necessarily come to terms with the subject (public or private, and the distinction is of considerable importance for the issue) who must manage data of companies.

Obviously, the considerations made must take into account the need to compress public health expenditure through internal and *EU* instruments, a consideration that may seem trivial but which stands at a fundamental crossroads of prospects for e-health, and a strategic role will be played by the Recovery Plan and the NRPs[109] in guiding a truly innovative development of health services.

4. A potential new concept of public transport service: reflections from and beyond the Uber case

[109] F. Merloni, *Il PNRR e le riforme della pubblica amministrazione. Dieci idee per progetti operativi*, 3 Or. Dir. pubb. 1-5 (2021); F. Manganaro, *Editoriale*, 1 Dir. econ. 1-8 (2021); F. Bassanini, *Le riforme, il 'vincolo esterno europeo' e la governance del PNRR: lezioni da un'esperienza del passato*, 1 Astrid 1-6 (2021); is critical the position held by R. Cavallo Perin, *Dalle riforme astratte dell'amministrazione pubblica alla necessità di amministrare le riforme*, 1 Dir pubbl. 73-81 (2021), who notes the inefficient subsistence of the tension between reforms and the very need to administer these public policies, for an analysis of the obstacles to the preparation and implementation of useful reforms in public administration, see M. Clarich, *Perché è difficile fare riforme della pubblica amministrazione utili all'economia*, 1 An. Giur. econ. 169-182 (2020); M. Clarich, *Riforme amministrative e sviluppo economico*, 2 Riv. trim. dir. pubbl. 159-188 (2020), according to which the halt in development is due to the well-known 20-year problems exacerbated by external economic conditions; L. Iannotta, *Amministrazione dello sviluppo ed economia e finanza di impatto sociale*, 6 GiustAmm 1-22 (2017).

The issue of local public transport represents a point of attraction for many classic aspects of administrative law, since the presence of an efficient local transport service is undoubtedly one of the thermometer of a nation's growth, being able to have a significant impact on the quality of life of its citizens, social cohesion, employment, economic growth, the performance of a significant number of businesses, public administration services and investments.

A cutting edge and interconnected form of transport does not pose problems in terms of privacy protection different from those already analyzed, but also raises different issues, such as protection of competition (in relation to possible episodes of unfair competition) linked to the relationship between data used by administrations or private entities that provide the public service, users and operators of the platforms that operate the technological platform that is responsible for the direction of the service.

The transport sector is a heterogeneous category, which can be classified according to different benchmarks, and can cover (by way of example) air, rail, road, scheduled or non-scheduled transport; in any case, the issue is linked to the right to mobility of citizens, if the point of view is that of the task of the public administration. In addition, this renewed concept of public transport also includes hybrid situations such as bike-sharing services, which can act as a link between the various existing public transport services, performing a fundamental function that can only be defined as a public service[110].

The common feature of the heterogeneous range of the transport sector is the presence in the competition sector, as a value to be protected both from the point of view of opening up to the market and from the point of view of the way in which relations are managed.

Transport policy is an essential part of European economy[111] and general governance policies must be coordinated with

[110] See T.A.R. Emilia-Romagna, Bologna, Sec. II, 20 March 2018, no. 260, concerning a dispute related to a public tender for the award of a bike sharing service based on the use of smart bicycles, and on a technology that makes it possible not to always have to guarantee bike-to-stall coupling, with the possibility of setting up virtual stations as well.

[111] L. Senn, *La politica dei trasporti in Europa*, in L. Ammanati, A. Canepa (eds.), *La politica dei trasporti in Europa: verso uno spazio unico?* (2015) 3-8, 11, it is noted

sectoral policies on the protection of transport-related values, such as the environment.

In addition to these aspects, after the budget item concerning health, the budget item concerning transport is the most significant in the financial statements of the Italian regions.

In addition, if the environmental aspect is also taken into account, the public transport sector plays an essential strategic role for economic development and, at the same time, represents one of the economic sectors that exercises the greatest pressure on environmental and natural resources.

In the public transport sector, more than in other sectors, legislative action is needed to ensure certainty of investment, technological adaptation of infrastructure, continuity of service and connections, proportionate tariffs[112].

The analysis carried out in relation to public transport must be subdivided into two autonomous sections: a first section dedicated to the current state of the service in Italy and a second section in which, starting from the so-called Uber case, possible points of development for the theme are traced in a perspective in which the service is no longer lowered from above (or not only) but responds to the needs immediately expressed by the citizen.

At the end, a part of the discussion is devoted to a possible declination of the local service, aimed at facilitating access for disabled people, in a social perspective of the use of technologies.

4.1 Local and national public transport in Italy: a perpetually unresolved issue

In this part of the analysis, the wide range of issues concerning the public transport sector, the various modes of entrustment and the strategic role that this sector plays from many points of view that are crucial for the administrative action of a State cannot be taken into consideration, in their entirety. However, it is necessary to analyse the main criticalities that afflict a sector in which the efficiency and economy of management must never be

that the definition of a common policy is hampered by the fear of Member States to lose their identity and to have a direct impact on businesses and the economic factors involved.

[112] In general terms on the subject, the approach offered by S. Vaccari, *Le tariffe dei servizi pubblici tra teoria economica e regolazione amministrativa*, 2 Riv. reg. merc. 367-394 (2020), is shared.

at the expense of the quality of the service provided; moreover, as has been authoritatively noted, the operating result (understood as the quality of the service provided) represents the characteristic and distinctive feature of the public service[113].

Public transport is an excellent example of a public service to be designed in a innovative way, since transport is a network industry, the subject of competition policy, as a privileged area for the creation of a single European area, based on the removal of administrative and technical barriers, in which ICT can play a strategic role[114].

The constant process of digitization in the access and functioning of transport makes mobility a service, according to the increasing use of ICT, changes the way in which consumers meet their mobility needs, a process that intercepts that of the creation of so-called 'mobility platforms'.

Moreover, the traditional public transport sector has not responded to the needs of citizens for a long time and, moreover, new needs have emerged in relation to auxiliary services that can only be provided through a more flexible system (and already takes on value in relation to the mobility of people with disabilities, as will be seen *infra* § 4.3).

[113] F.A. Roversi Monaco, *L'attività economica pubblica*, in F. Galgano (ed.), *Trattato di diritto commerciale e di diritto pubblico dell'economia* (vol. 1, 1977) 429-431; from the perspective of user protection in the field of public services, the analysis carried out by M. Ramajoli, *La tutela degli utenti nei servizi pubblici a carattere imprenditoriale*, cit. at 48, 383; F. Giglioni, *Le garanzie degli utenti dei servizi pubblici locali*, cit. at 45, 370-372.

[114] Cf. M. Gola, *Periferie, viabilità e trasporto*, in M. Immordino, G. De Giorgi Cezzi (eds.), *Periferie e diritti fondamentali* (2020) 373-380; F. Gaspari, *La regolazione della mobilità urbana sostenibile e i limiti del 'Green Deal' dell'Unione Europea. Ovvero, il ruolo dello Stato all'alba della post-globalizzazione*, 1 Munus 67-109 (2020); T. Bonetti, *Il trasporto pubblico locale nel prisma della mobilità sostenibile*, 3 Dir. amm. 563-580 (2020), a substantial change is taking place in which, even if it is not always straightforward and in any case marked by many delays and resistance, local public transport should be able to acquire a renewed centrality in terms of sustainable mobility, to a point where sustainable mobility seems to be able to assert itself as the relative paradigm of reference; see the analysis carried out by L. Ammanati, *Diritto alla mobilità e trasporto sostenibile. Intermodalità e digitalizzazione nel quadro di una politica comune dei trasporti*, 3-4 Federalismi 6 (2018), intelligent mobility systems include ERMTS, SESAR, SafeSeaNet, RIS, ITS, as the emphasis on innovation is evident in all areas of public transport and takes a look in different directions; S. R. Foster, *The limits of mobility and the persistance of urban inequality*, 127 Yal. L. Journ. 11 (2017).

In the concept of mobility as a service in itself, the change of perspective is evident (and the Uber case is an example) because the role of users is increasingly placed at the centre, reversing perspective with service provider.

Some issues, such as the management of personal data and the tension with right to privacy, the management of sensitive data belonging to companies by public or hybrid subjects present the same critical points already found so far in the course of this analysis.

However, account should be taken of the many factors that lead to inefficiency in the public transport sector (both legislative and managerial) which could be resolved by a different understanding of the same concept of transport and by rethinking the same modes of delivery.

Public transport framework represents public service *par excellence*, also at European level, while other services are considered "of general interest[115]".

Classification of a specific service activity as a public service may allow for some derogation from general rules on economic activities and such derogations may concern the greater discretion accorded to public administrations representing local authorities in their choices of organization and management of public transport services[116].

[115] The transport sector is essential to ensure the development of the economy and the well-being of civilian population in the European context, as it facilitates the functioning of the internal market, fosters employment growth in the European Union and contributes to the evolution of the European integration process.

[116] Please refer to G. Caia, *Il trasporto pubblico locale come paradigma del servizio pubblico (diciplina attuale ed esigenze di riordino)*, 3-4 Rivista AIC 334-338 (2018); for a complete overview of the legislation and critical points in perspective, see F.A. Roversi Monaco, G. Caia, *Situazione ordinamentale e prospettive del traporto pubblico regionale e locale*, in F.A. Roversi Monaco, G. Caia (eds.), *Il trasporto pubblico locale* (vol. 1, 2018) 7-11; M.I. Triolo, *Il trasporto pubblico locale: la qualificazione dell'attività in termini di servizio pubblico e il contratto di servizio*, 1 Rass. Avv. St. 247-261 (2016); on the modalities of entrustment of the service, *inter alia*, see L.R. Perfetti, *Le procedure di affidamento dei trasporti pubblici locali*, 1 Munus 129-145 (2015); S. Vasta, *Diritti e obblighi dei passeggeri nel trasporto pubblico locale*, 4 Diritto e processo amministrativo 1123-1145 (2015), challenges of local public transport concern both the way local public transport services are allocated and the question of financing local public transport, as well as the relationship between local and national legislative; D.U. Galetta, M. Giavazzi, *Trasporti terrestri*, in G.

One of the first real issues in the field of public transport, which concerns, but is not limited to, modes of entrustment, concerns regulatory fragmentation, a myriad of European, primary and regulatory provisions, in addition to the opinions of national authorities and other acts of soft law or flexible regulation.

In other terms, legislative fragmentation occurs both at domestic level (also in relation to multi-level competences between different local authorities) and at European level. In this regard, it is advisable to note the possible frictions and overlap between Regulation 2007/1370/EU on public transport services (as partly reformed by Regulation 2016/2338/EU) and Directive 2014/23/EU on the award of concessions. The issue is extremely complex and concerns several sensitive areas of possible overlap, although it is necessary to underline the provision contained in Art. no. 10 of Directive 23/2014/EU which expressly sets out a preference clause for the application of Regulation 2007/1370/EU, through a legislative choice that prefers the specialty of the public transport sector[117].

The transport sector represents a public service which, as such, must be governed by the principle of economy, which in turn must, however, be guaranteed in the same way as the principle of continuity of service. In other words, the concrete guarantee of the aforesaid operational continuity can only be provided by

Greco, M.P. Chiti (eds.), *Trattato di diritto amministrativo europeo* (vol. 4, 2007) 2294-2299.

[117] In general terms, on shared mobility and needs to reform this sector, see E. Caruso, *Trasporto pubblico locale non di linea e mobilità condivisa tra continuità e discontinuità regolativa*, 10 Dir. quest. Pubbl. 1-37 (2020); on the subject, in another perspective, but relevant to the explored topic, see M.E. Bucalo, *I servizi delle piattaforme online tra giurisprudenza sovranazionale e interna e necessità di regolazione dell'economia collaborativa. Riflessioni a partire dal Caso Airbnb*, 22 Federalismi 66-93 (2020); on the subject of collaborative practices, in relation to established premises, there are several aporias concerning the role of local authorities in this development, cf. S. Profeti, V. Tardini, *Le pratiche collaborative per la coproduzione di beni e servizi: quale ruolo per gli enti locali*, 4 Ist. fed. 861-877 (2019); P. Tullio, *Da Uber ai robotaxi: spunti comparatistici per una riforma degli autoservizi non di linea*, 2 Dir. trasp. 403-423 (2019); see, also, for a view about possible antinomies and overlaps between Directive and Regulation, the exhaustive analysis carried out by N. Aicardi, *L'affidamento delle concessioni di servizi pubblici nella Direttiva 2014/23/UE ed il rapporto con il Regolamento (CE) n. 1370/2007 sui servizi pubblici di trasporto di passeggeri su strada o ferrovia*, 3-4 Riv. it. Dir. pubbl. com. 533-553 (2018).

the management efficiency, as a suitable balance factor to avoid or in any case to prevent interruptions or quality downgrades.

Public transport, regardless of the mode chosen by the administration to provide the service, is a real black hole for public finance with a very low quality of service and disproportionate costs incurred by public entities[118]. The legislation requires that operation of regional and local public transport services, in any manner and in any form entrusted, must comply within principles of economy and efficiency (in accordance with Art. no. 18, Legislative Decree 19 November 1997, no. 422), but in Italy there are numerous failures of management in this sector.

However, it should be noted that the fragmentary legislative framework on local transport services does not help the pursuit of good overall performance of service as a whole, but similarly it should be noted that many of the critical issues and problems that affect the management of public transport services could be overcome if the administrative authorities simply strive to give a proper application to legal tools that are already present in the legislation and that are designed and suitable to provide a significant input to the expected cost-effectiveness and management efficiency.

Widespread inefficiency of public transport at various levels is an established fact and concerns various components, in terms of delays, lack of maintenance of infrastructure, obvious territorial disparities, not only between North and South of the nation but also within the same region.

[118] Cf., in relation to subject of competences, L. Lorenzoni, *Accentramento o frammentazione delle competenze in materia di regolazione del trasporto ferroviario: modelli istituzioanli a confronto*, 1 Munus 4-11 (2018), in area of rail transport, European law pursues the objective of protecting and promoting free competition between undertakings, and derogations from this system may be granted only for overriding public interests; on the specific subject of rail transport, which will not be examined in this work, see the contribution to the subject under investigation provided by A. Police, *Il servizio pubblico di trasporto in Italia, regolazione e mercato nel trasporto ferroviario*, 3 Nuove Aut. 321-334 (2015); M. Ponti, *I trasporti pubblici locali: cronaca di una morte annunciata*, 1 Il Mulino 38-42 (2014), local public transport costs the public administration a great deal, compared with a quality level of services provided that does not correspond to this public expenditure; although analysed from a specific perspective, see the unsurpassed analysis of problems in the transport sector carried out by T. Treu, *Il patto dei trasporti*, 1 Lav. P.a. 11-21 (1999).

4.2. Notes for a rethink of public transport from a smart perspective: the Uber case and beyond

The general mismanagement of local public transport also calls for a rethink on the basis of the opportunity to exploit existing technologies, the search for a subtle balance between rules, protection of rights, good delivery of public service, respect for EU rules, not compromising free competition.

Transport regulation, especially at European level, has experienced numerous changes in recent years between liberalization and re-regulation processes.

In addition to this swing of settings, there are also numerous technologies, based on algorithms and data, which have had a significant impact on the regulation of public transport, but to which the Italian law has not yet provided an organic response.

In any case, two main aspects that emerge from regulatory policies of this theme revolve around concept of a policy that must be competitive and sustainable[119].

[119] M.G. Della Scala, *Lo sviluppo urbano sostenibile e gli strumenti del governo territoriale tra prospettive di coesione e tutela dei diritti fondamentali*, 4 Dir. amm. 787-790 (2018); N. Michele, *La politica dei trasporti dell'Unione Europea e le problematiche riuardanti la tutela ambientale e lo sviluppo sostenibile*, 2-3 Dir. comm. Internaz. 227-234 (2013), over years, national and European transport policies have had to deal with the identification of new basic needs, namely the need to ensure the efficiency and competitiveness of the sector by seeking compatibility with another emerging need of equal importance, such as the protection of natural and environmental resources. Since most of the journeys in the European Union are carried out by road and a large part of the environmental pollution comes from road transport vehicles, which cause high greenhouse gas emissions and frequent congestion in road traffic, the European Union has adopted a series of legislative measures to reduce the negative impact of these types of transport on the environment and the excessive encumbrance of connecting routes in order to rationalize the entire set of legal instruments; see European Strategies, White Book (2011), Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system, COM (2011) 144, avaiable on www.eur-lex.europa.eu (2011), "mobility is vital for the internal market and for the quality of life of citizens as they enjoy their freedom to travel. Transport enables economic growth and job creation: it must be sustainable in the light of the new challenges we face. Transport is global, so effective action requires strong international cooperation", "New technologies for vehicles and traffic management will be key to lower transport emissions in the EU as in the rest of the world. The race for sustainable mobility is a global one. Delayed action and timid introduction of new technologies could condemn the EU transport indus-

Undoubtedly, one of the issues that should be resolved in order to achieve these objectives concerns coordination between different levels of governance on the topic, aiming at a common policy and a single European area, issues that seem to overlap, but that often follow divergent paths.

As part of the search for such a delicate balance, technological innovation can undoubtedly lead to an overall rethinking of the transport system, which can become a means of achieving the objectives of sustainable and efficient mobility.

From this point of view, Uber affair can provide interesting food for thought[120], in terms of the system's capacity to maintain public services and compatibility of current provisions with a service requested by the user and not decided by the provider (regardless of its legal nature, public or private).

try to irreversible decline. The EU's transport sector faces growing competition in fast developing world transport markets"; M. Foti, *L'economia collaborativa davanti alla Corte di Giustizia dell'Unione Europea: alcune riflessioni a margine della sentenza Uber Spain*, 3-4 Riv. it. dir. pubbl. com. 507-535 (2019); B.G. Edelman, *Efficiencies and regulatory shortcuts: how should we regulate companies like Airbnb and Uber*, 19 Stan. L. Rev. 293-310 (2016); in relation to the subject under analysis, see K.C. Strong, *When apps pollute: regulating transportation network companies to maximize environmental benefits*, 86 Univ. Col. L. Rev. 1049-1053 (2015), "ridesharing has long been touted as a means to reduce the pollution and congestion caused by personal vehicles, but in practice has been relatively unpopular among Americans. That outlook may be changing, however, thanks to new 'Transportation Network Companies' (*TNCs*) that toe the line between ridesharing and for-hire passenger transportation services, such as taxis and limousines. UberX, Lyft, Sidecar, and other similar services have rapidly spread to cities throughout the United States, attracting the attention of investors and ire of incumbent transportation providers. Legal commentary has thus far focused on proposed regulations implications for liability, public safety, and fairness, but this Comment seeks to broaden the conversation to assess their potential environmental implications".

120 There are other cases in Europe related to the functional relationship between technologies and public transport, such as, for example, the 'FlixBus' case, a mode of transport by bus whose company, founded in 2011 in Munich, used software to exploit data through a logistics platform, using data from different private platforms or held by public entities. The particularity of this case was based on the separation of the legal entity responsible for the organisation from the companies providing bus transport services, which created considerable problems with regard to the tariffs applied and therefore with regard to free competition.

Uber is an instrument of sharing economy[121] that converges with the current connotation of the urban social context, characterized by a changing legislative landscape and a growing level of demand for mobility by users.

The change in the paradigm underlying potential of these platforms (in which users geolocate, exploit reduced fares) has to deal with the characteristics of the urban system, with the rules on public transport, with damage to the principle of free competition, with the need for the administration not to remain on the sidelines of the change induced from outside, which, to date, does not correspond to a body of rules (neither primary nor secondary).

The subject has been the subject-matter of numerous judgments (issued by ordinary and administrative courts and by the Constitutional Court) which can provide a broader reading of the case, in order to try to derive from this some reflections of a broader nature.

The starting point on this issue can be represented by a part of the Constitutional Court ruling 15 December 2016, no. 265, according to which technological evolution and resulting economic and social changes raise questions that are not only jurisdictional but much broader[122], due to plurality of interests involved and relative intersections and balances[123].

Specifically, Constitutional Court is aware that the whole debate cannot be resolved at a domestic level but must be dealt with at a European level, and specifically brings the whole issue into the category of issues relating to competition.

[121] See, in a business perspective, S. Valaguzza, *Nuovi scenari per l'impresa pubblica nella 'sharing economy'*, 27 Federalismi 363-391 (2020); cf. C. Iaione, '*Sharing economy*' *e diritto dell'innovazione. Il caso della mobilità urbana*, 1 Munus 187-232 (2019); F. Pellegrino, *Il diritto dei trasporti quale motore di sviluppo delle 'gig economy'*, 2 Dir. trasp. 693-711 (2019).

[122] Cf. M.E. Bartoloni, *The EU Social integration clause in a legal perspective*, 1 It. J. Pub. L. 98-104 (2018).

[123] R. Ducato, *Scritto nelle stelle. Un'analisi giuridica dei sistemi di "rating" nella piattaforma Uber alla luce della normativa sulla protezione dei dati personali*, 10 Dir. quest. Pubbl. 1-35 (2020); O. Pollicino, V. Lubello, *Un monito complesso e una apertura al dibattito europeo rilevante: Uber tra giudici e legislatori*, 6 Giur. Cost. 2479-2485 (2016), the ruling under examination declares the unconstitutionality of Regional Law of Piemonte 6 July 2015, no. 14, which limited to taxi services and rental with driver the possibility of using computer support for the supply, excluding from this system the Uber bracket.

Arguments set by Constitutional Court, from which it is possible to draw important points of investigation, refers to regulation of non-scheduled public transport, i.e. licence for transport by taxi and authorization for the rental service with driver[124].

In a regulatory framework linked to the provisions of Law 15 January 1992, no. 15, new services were introduced that provide a non-scheduled public transport service through the use of modern technologies of geolocation and interconnection between the end user and means of transport.

Obviously, there were differences and regulatory shortcomings, since, as noted by Council of State[125], new models of public transport are not related to the regulated cases, since payment is deferred on the basis of a price set by an algorithm and not by the administration, and geolocation is an aspect on which the regulation of the sector is silent[126].

[124] Taxi service is marked by wide stretches of public service, including the pricing predetermined by the administration and the indeterminate users. Car rental with driver differs in many aspects, but the discipline of the matter is also entrusted to the Law 15 January 1992, no. 21; for a review of several European court rulings on the Uber legal qualification see R. Lobianco, *Servizi di mobilità a contenuto tecnologico nel settore del trasporto di persone con conducente: brevi riflessioni sulla natura giuridica del fenomeno Uber*, 3 Resp. Civ. prev. 1046-1058 (2018), which states that, under Italian law, the qualifications of Uber, from a civil point of view, may fall into different categories, a feature which will be analysed only if it raises questions relating to the protection of competition or administrative powers. From the point of view of private law, the brokerage system set up by Uber could fall within one of the types of mandate contract with or without representation (Art. no. 1703-1704 of the Italian Civil Code) so that the latter concludes, in the name of the user, a contract of carriage with a carrier chosen by the algorithm; among the possible subtypes, the shipping contract is excluded and this, in addition to the fact that the shipment has as its object the conclusion of contracts for the carriage of goods and not persons, also because there is no real obligation management by Uber, an obligation that characterizes the mandate contract, and in particular that of shipment, as a replacement tool in acting;; E. Corapi, *Regulatory sandbox in FinTech?*, 4 Dir. comm. Int. 785-799 (2019); N. Rampazzo, *Rifkin e Uber. Dall'età dell'accesso all'economia dell'eccesso,* 5-6 Dir. inf. 957-959 (2015), in which the widespread dissemination of communication tools has also had an impact on the issue of mobility.

[125] Cons. St., 25 November 2015, advice no. 757, the public transport system shows signs of the time that has passed and it is advisable for the legislator to intervene with a discipline that is able to include all the sectors affected by transport, without leaving room for action without discipline.

[126] European Court of Justice (ECJ), Judgment of the Court (Grand Chamber) of 20 December 2017, Case C-434/15, avaiable on www.eur-lex.europe.eu (2017),

The competitive advantages of Uber service consist in carrying out the activity in an open space (not subject to the administrative burden) but the differences also concern other aspects including the possibility for drivers to refuse the request, which is not the case for non-scheduled public services.

The scope of the delimitation of the issue of the legal position of Uber is therefore necessarily that of competition, although it is appropriate to clarify some aspects that, however, as noted by the Constitutional Court, must be resolved at EU level[127].

In conclusion on this aspect, it is worth mentioning, albeit briefly, of debate that has developed in a sprawling way in Spain and France, with obvious repercussions on social balances that were already unstable due to external situations.

In Spain, the issue needs a social, economic and political interpretation[128].

The so-called 'Abalos' Decree attempted to systematise a very complex matter, with restrictions based on a regional scale, which did not have the desired effects. The problem was not just one of licensing and frictional aspects with taxis, but the need to render organic subject, which had been the subject of intense po-

"the intermediation service provided by Uber is based on the selection of non-professional drivers using their own vehicle, to whom the company provides an application without which those drivers would not be led to provide transport services and persons who wish to make an urban journey would not use the services provided by those drivers. In addition, Uber exercises decisive influence over the conditions under which that service is provided by those drivers. On the latter point, it appears, *inter alia*, that Uber determines at least the maximum fare by means of the eponymous application, that the company receives that amount from the client before paying part of it to the non-professional driver of the vehicle, and that it exercises a certain control over the quality of the vehicles, the drivers and their conduct, which can, in some circumstances, result in their exclusion".

127 O. Pini, *Le nuove frontiere del servizio pubblico locale: la vicenda 'Uber' tra regolazione, giurisprudenza e ruolo delle autonomie*, 2 Nuove Aut. 401-411 (2015), the Uber affair has raised a number of issues that are intertwined between internal and EU legislation, regional competences and cases related to the protection of competition.

128 Cf. M. Noa, *Uber en Espana, Factores sociales, económicos y políticos para considerar*, 6 Comillas 8-9 (2019); J.J. Montero, *La regulación de la economia colaborativa: Airbnb, BlaBlaCar, Uber y otras plataformas* (2017) 11-24; cf. in a broader perspective, C. Chapla, *Regulating the sharing economy at the legal frontier: the case of Uber in the European Union*, 1 Stan. L. W.P. 4-7, 18-22 (2017); G. Doménech, *La regulación de la economía colaborativa*, 175 CEFLegal 65-68 (2015).

litical debate.

The matter has also had turbulent developments in the French context, with rulings by France's Constitutional Court and countless reform projects, because in France, too, debate around digital platforms has become increasingly lively in recent years, with an increase in the number of people working thanks to the IT applications provided by large platforms operating in various market sectors.

To appreciate tense state of the issue, one can observe how, in 2017, "Paris created a special law enforcement department, called the Boers, to stop Uber drivers and issue tickets. Once Uber drivers were ticketed, they were told to stop driving for the company. However, Uber paid for these tickets, and the drivers kept driving[129]".

Although this issue has been shifted to the protection of workers and their contractual framework, it still suffers from a particularly invasive role of Courts but not from an adequate regulatory framework, as is the case in rest of Europe.

4.3. Smart transport in terms of welfare state: potential and developments for people with disabilities

Some final study notes on public transport and the use of technologies should be dedicated to the possibility of dedicating auxiliary aspects of the transport service to the requests of users with difficulties (disabled or elderly)[130], starting from specific requests that can be forwarded by the subject who requests it in real time to the subject providing the service. This subject, of course, deserves an autonomous and detailed study, but in this context, the approach of the lawyer to subject may be in sense of finding legislative paths to facilitate the use of technologies on this

[129] Cf. J.C. Martini, *International regulatory enterpreneurship: Uber's battle with regulators in France*, 2 San Diego L. Rev. 145-153 (2018); the problem also arose from the perspective of the legal position of drivers, as noted by M. Männis, *Uber drivers considered as employees in France, court rules*, 3 Labour Law 1-3 (2020), the ruling held by the *Cour de Cassation* [n° 374, 4 March 2020] could severely impact the American company's business model, given the added costs and responsibilities that come with an employment relationship, in contrast to the contractor model that the company has been claiming since its inception.

[130] On the general relevance of the issue, the following views are shared by A. Albanese, *Il servizio di trasporto dei malati tra regole della concorrenza e valore sociale*, 1 Munus 115-155 (2012).

graft[131].

Among public services, transport is undoubtedly one of sectors in which the ability of the public administration to ensure an adequate quality of supply, whether produced by public (companies) or by private (companies), is most called into question, and obviously, the whole is accentuated if they are physically disabled. In transport, in fact, the use of the service itself presupposes a strong, physically tangible interaction between the service provided and the user. It is precisely in this direction that a major development in recent years has had the issue of passenger rights, both at European and at national level, a general issue in which the rights of disabled people are given specific attention.

This issue is dealt with sporadically by legislation, including it is necessary to mention Art. no. 16 of Legislative Decree 17 April 2014, no. 70 which provides for penalties for violations of obligations relating to persons with reduced mobility and Artt. 8 et seq. of Legislative Decree 4 November 2014, no. 169.

In this sense, there is a negative opinion for legislation that only penalises shortcomings in the administration, without identifying incentives or subsidies for administrations that use ICT to facilitate and reduce difficulties in accessing public transport services for the disabled and the elderly.

All the legislation set up by in last twenty years concerning traditional public transport has had key objective of ensuring that persons whose mobility is reduced when using transport because of a physical disability (sensory or locomotor, permanent or temporary), mental disability or impairment, or any other cause of disability, or because of age, have a transport service under conditions comparable to those enjoyed by other users. The two key interpretations of Italian legislation in this area are the improvement of the quality of service with a strong commitment to eliminate or reduce the causes of inconvenience to users and guarantees for the application of sanctions against transport companies under EU and national rules on passenger rights.

For all transport systems, there are many simple improve-

[131] In terms of the interconnection between administration, digital and mobility, please refer to C. Inguglia, M. Di Marco, *Mobilità urbana ed inclusione sociale dei migranti: il ruolo della sharing mobility. Una ricerca qualitativa*, 10 Dir. quest. Pubbl. 1-21 (2020); G. Camarda, *Per una collocazione sistematica del diritto dei trasporti*, 3 Dir. trasp. 609-655, 661 (2015).

ments to vehicles, infrastructure and operational practices that can increase accessibility at little cost. These improvements are well known and the problem is one of implementation. Once these improvements have been made, there will remain barriers to accessibility that could be overcome by the use of ICTs. These include, for all modes, the provision of better trip-planning information and information during a journey.

From a legal point of view (understood as legislation in force, but also in terms of case-law or scholars' approach) the subject is in a field that is almost completely unexplored by law.

This topic actually raises problems that would be more solvable by the administration (and at the same time also by the legislation) because the consent of the subject would overshadow the issues related to privacy and the social component of the choice to make available to people with ICT limitations able to direct some aspects of public transport in order to avoid that the limitations prevent the use of the public service itself. The possibility of using databases and ICT by people with physical limitations in the field of public transport, in order to allow full use of the service, could be a laboratory for the administration to experience any problems and potential, precisely because of the final social vision.

The balance with the primary value of privacy in this case seems to recede, since the consent of the subject himself and the need to respect the principle of equality (in this case the use of technology would serve to reduce the difficulties of the subject) enshrined in Art. no. 3 of the Constitution do not raise doubts in that regard.

One of the most interesting aspects underlying a rethink of transport in smart form, with a view to improving the service, is to direct this service from a social point of view, to facilitate access to and use of transport for the elderly or people with disabilities.

The possibility of orienting the service on the basis of the users and their relative preferences assumes a particular importance in relation to people with disabilities, since it would be a matter of orienting the service (or welfare or auxiliary aspects) of the service, from a social point of view, of substantial equality, since it would be a matter of the possibility of removing obstacles to the same fraction of the service, exploiting the technological apparatus, the databases and the requests of the person with a

disability or elderly person[132].

From a legal point of view for Italian law, the ideal approach proposed in this analysis is the possibility to make organic rules regulating public transport for people with disabilities (also with regard to so-called auxiliary services to public transport) so as to have a clear set of rules on which to reason in relation to implementation of technological supports that guide public action in this regard.

In conclusion, an active role can be identified for the public administration or for provider of service or for another autonomous subject that manages the ICT in support of this objective of making access to public transport less difficult for people with disabilities[133], in a context that summarizes the social value of public power and the use of technologies aimed at improving or supporting the exercise of public function, not to be understood as the exercise of power but as a direct public action to needs of citizens.

5. Towards a new model of public service, a requirement rather than a choice

Attempts to identify some common traits and shared con-

[132] On the subject, see the study conducted by R. Battarra et al., *Smart Mobility and Elderly People. Can ICT Make the City More Accessible for Everybody?,* Sp. Iss. TeMA Jour. of Land Use Mob. and Env. 53-61 (2018) the first essential component that characterizes Smart Mobility for the elderly is accessibility, which can be defined as the "ability of places to be reached, in order to make elderly able to participate to city daily life, by preventing inequality in terms of spatial access". The adoption of a smart approach cannot be limited to a market-induced uncritical introduction of devices or sensors, instead, it will be necessary to refine the tools for understanding the needs of specific categories of users, such as the elderly, to define integrated strategies able to operate on many aspects simultaneously. The subject is obviously broader, since it is necessary that Smart Mobility for the elderly and people with disabilities cannot fail to take into account the need for interventions in cities, which might help them move around safely (such as the construction of pedestrian paths, equipped public transport stops, maintenance of sidewalks, pedestrian crossings with traffic light systems, urban furniture), but also the need for public transport management policies aimed at facilitating this mode of movement; N. Colette, P. Bjorn, *Elderly and disabled travellers: intelligent transport systems designed for the 3rd millenium*, in 1 Transp. Hu. Fac. 121-134 (1999).

[133] C. Favretto, *Il costo dei diritti come limite alla discrezionalità economica del legislatore: il caso degli studenti disabili*, 3 RSDD 603-608 (2019).

clusions collide with the variety of topics and aspects covered, which have involved several key aspects of the issue of smart management of public services.

Many of the issues raised, citizens' rights, a critical rethink of public services, legal certainty: these are all topics that must be addressed in the context of digitalization of society, of action, of development, through public choices that cannot ignore how central topics for a country's development are taking direction.

This is not meant to offer miraculous solutions or formulas for implementing a drift that is imposed on the administration, or rather imposed by market, well beyond those liberalizing and simplifying policies having a liberalizing effect proposed from time to time in a constant state of complexity, without solving problems. Neither, from time to time, can the administrative courts authorize or neutralize economic systems and operators to enter into market, a role to which administrative judges should not be assigned, even in the variety of tasks that have been assigned to them over these years.

It is all too obvious how important for economic development the introduction of technology in public services is, without prejudice to any need to regulate the subject, without being able to achieve pathological deviations from regulations, precisely because of protection, among others, of values such as privacy and competition, which are indicated in this survey as benchmarks for any limits that may be opposed.

Various profiles concerned must, however, be brought back into line within a system, since it is unthinkable to envisage a fragmentary regulation or to envisage that, from time to time, infringement of privacy or competition should lead to legal consequences that render the whole field less attractive.

The action of public administrations to be oriented on the basis of varied needs of users with some peculiar aspects that leave limited balancing space to the administration (as in the case of the constitutionally protected rights investigated during the chapter) raises doubts and potential, in a legislative landscape still unaware mostly of these aspects, which however cannot and should not be ignored, especially if we think in terms of the low quality of services provided in Italy, especially at the local level.

Evidences identified in this paper, although limited to two specific but strategic areas, allows some brief conclusions to be

drawn against a fragmentary or sometimes non-existent legislative framework.

While it is impossible to overturn the existing complex system of management and entrustment of public services, it is impossible not to recognise the impact of these new forms of service or the issues raised by the use of new platforms, beyond the legal qualification provided (as for example in the Uber case).

As noted, many issues are raised, including the renewed relationship between administration and the market in light of the use of ICT or digital platforms, the protection of privacy or secrecy in terms of industrial know-how, the re-use of data by administrations or the entity that manages the service.

The legislator, especially with regard to public services in relation to the impact in terms of public savings and possible areas relating to infringements of competition that cannot remain unregulated with the risk of sanctions by the EU, cannot fail to take into account the needs of a changing market as users needs, i.e. citizens, change.

From this point of view, for sectors investigated, considerations of European Commission are particularly relevant. The Commission hopes for a creation of an inclusive electronic society in which businesses and citizens have the skills and knowledge necessary to use the interconnected electronic services, at least in relation to the strategic areas of administration of justice, health, energy and transport[134].

However, in view of the need, rather than a choice of legislative policy (both for Italy and for the EU), to be able to exploit new technologies and new advice to direct public services towards a smart, interconnected and more effective dimension, the obstacles are considerable and cannot be easily overcome.

Although lawmakers and administrations are facing chal-

[134] European Commission, *A Digital Single Market Strategy for Europe*, COM (2015) 192 final, available at www.ec.europa.eu/digital-single-market (2015); A. Pajno, *Crisi dell'amministrazione e riforme amministrative*, 3-4 Riv. it. dir. pubbl. com. 549-560 (2017), which, in general terms, points out that reforms, which must flank rather than hinder innovation, should be brought to the attention of public opinion and rulers themselves from a different angle; L. Torchia, *Stati e mercati alle soglie del terzo millennio,* in *Il cittadino e l'amministrazione* (2016), 45-51; G. Ubertis, *Interdisciplinarità, diritti fondamentali, informatica: una cornice generale*, 1 Jus 109-113 (2013).

lenges from which they have so far been unsuccessful, technology is now making it necessary, at least at European level, to introduce uniform regulations in order to balance various and extremely heterogeneous values at stake, which vary from one public service to another, but which must be brought back into a single key of macro-principles inspiring different administrative regimes[135].

The risk that digitalization, also in relation to public services, might go the way of simplification, a goal always announced and never achieved, and reach the point of continuously issuing 'Digitization Decrees' is unfortunately not remote. Simplification Decrees, *bis*, *ter*, *quater*, *ad infinitum*, the usual way to reform an administration at zero cost, whose static nature, in view of extraordinary recovery plan, becomes an obstacle that Italy cannot afford not to overcome.

[135] See A. Pajno, *Giustizia amministrativa ed economia*, 3 Dir. proc. amm. 952-978 (2015), faced with such a complex situation, the ambition can only be to moderate expectations, to isolate extreme positions which, on the one hand, envisage an unprotected economy and, on the other, a non-economic system, and to try to achieve a balance that is fair and always perfectible.