

AI and Public Services: a Challenging Relationship Between Benefits, Risks and Compliance with Unavoidable Principles*

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ABSTRACT The adoption of AI solutions in public services generates savings, enhances quality of services, allows to reach larger production scales and, by eliminating human errors, is able to give greater guarantees to citizens. In particular, the study intends to focus on the improvements that can be realized with the help of AI in the relations between levels of government and above all in the numerous relationships between public authorities and private subjects. From this last point of view, it appears essential on the one hand that in the use of AI public administration does not deviate from its inherent principles and on the other hand that citizens consider the use of new technologies in the public sector to be reliable. Despite the many potential benefits of AI, there are also numerous risks, which must be addressed first of all in order to ensure respect for democratic values and human rights, while there is still a lack of uniform legislation in relation to the use of AI in the public sector. In this still unclear but constantly evolving framework the use of AI in public administration raises many other issues, including its compliance with the unavoidable founding principles of public service.

1. Public sector and AI: opportunities, risks and limits

For years, artificial intelligence (AI)¹ has been part of our lives, pervading them, shaping them and building a model of a new normal. It is a global and elusive phenomenon. In fact, there is no univocal definition of artificial intelligence, but there are many meanings attributed to it². One of

the most recent definitions of AI is given by the European Commission, which describes it as “a fast evolving family of technologies that can bring a wide array of economic and societal benefits across the entire spectrum of industries and social activities”³. AI brings numerous advantages to our existence and offers many opportunities, but it also has disadvantages and dangers, more or less clear and known. In fact, there is no complete and exact notion of what the impact of AI is, and AI appears to be capable of affecting an ever wider range of aspects of human life. Technology is constantly and rapidly evolving, inevitably resulting in the difficulty of accurately evaluating its effects.

The public sector is also one of the various areas pervaded by AI⁴ and its algorithms⁵. In

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¹ Artificial intelligence, a “set of intelligent systems”, is the discipline that allows a machine to process and represent an enormous amount of information, analyze the environment, draw deductions, make reasoning, find solutions, plan, act towards a specific goal and learn automatically by improving its performances through experience, and finally work and decide independently. It studies the theoretical foundations, methodologies and techniques that allow the design of hardware and software systems capable of providing the electronic computer with performance that, to a common observer, would seem to belong exclusively to human intelligence. According to the Council of Europe, AI is to be understood as “a set of sciences, theories and techniques whose purpose is to reproduce by a machine the cognitive abilities of a human being”, www.coe.int/en/web/human-rights-rule-of-law/artificial-intelligence/glossary. The term was coined by John McCarthy in 1956, during a summer seminar at Dartmouth College: in this regard F. Amigoni, V. Schiaffonati and M. Somalvico, *Intelligenza Artificiale*, in www.treccani.it, 2008.

² On the non-univocity of the meaning of AI for example: Council of Europe, *Ad Hoc Committee on Artificial Intelligence (CAHAI), Policy Development Group*, CAHAI-PDG(2021)03, 4; J. Berryhill, K.K. Heang, R. Clogher and K. McBride, *Hello, World: Artificial Intelligence and its Use in the Public Sector*,

OECD Working Papers on Public Governance n. 36, 2019, especially 7 and 11.

³ European Commission, *Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, COM(2021) 206, 21 April 2021, recital 3.

⁴ On AI in the public sector: Oxford Commission on AI & Good Governance, *AI in the Public Service: From Principles to Practice*, 2021; D. Desordi and C. Della Bona, *A inteligência artificial e a eficiência na administração pública*, in *Revista de direito*, vol. 12, n. 2, 2020, 1. On AI in Administrative Law, *ex multis*, J. Palma Méndez and R. Marín Morales, *Inteligencia artificial*, Madrid, McGraw-Hill, 2011, 83; E. Carloni, *Algoritmi su carta. Politiche di digitalizzazione e trasformazione digitale delle amministrazioni*, in *Diritto*

pubblico, n. 2, 2019, 363; Id., *AI, algoritmi e pubblica amministrazione in Italia*, in *Revista de los Estudios de Derecho y Ciencia Política*, 2020, 7; S. Crisci, *Intelligenza artificiale ed etica dell'algoritmo*, in *Foro amministrativo*, n. 10, 2018, 1787; P. Otranto, *Decisione amministrativa e digitalizzazione della p.a.*, in *Federalismi.it*, n. 2, 2018, 1; J. Ponce, *La prevención de riesgos de mala administración y corrupción, la inteligencia artificial y el derecho a una buena administración*, in *Revista Internacional Transparencia e Integridad*, n. 6, 2018; Id., *Inteligencia artificial, Derecho administrativo y reserva de humanidad: algoritmos y procedimiento administrativo debido tecnológico*, in *Revista General de Derecho Administrativo*, n. 50, 2019; E. Picozza, *Intelligenza artificiale e diritto*, in *Giurisprudenza italiana*, n. 7, 2019, 1771; L. Viola, *L'intelligenza artificiale nel procedimento e nel processo amministrativo: lo stato dell'arte*, in *Foro amministrativo*, n. 9, 2018, 1598; Id., *Attività amministrativa e intelligenza artificiale*, in *Cyberspazio e diritto*, n. 1-2, 2019, 78; G. Avanzini, *Decisioni amministrative e algoritmi informatici*, Napoli, Editoriale Scientifica, 2019; I. Martín Delgado, *Automazione, intelligenza artificiale e pubblica amministrazione: vecchie categorie concettuali per nuovi problemi?*, in *Istituzioni del federalismo*, n. 3, 2019, 643; M.C. Cavallaro and G. Smorto, *Decisione pubblica e responsabilità dell'Amministrazione nella società dell'algoritmo*, in *Federalismi.it*, n. 16, 2019, 1; D.U. Galetta and J.G. Corvalán, *Intelligenza Artificiale per una Pubblica Amministrazione 4.0? Potenzialità, rischi e sfide della rivoluzione tecnologica in atto*, in *Federalismi.it*, n. 3, 2019, 1; A. Lalli, *Il sapere e la professionalità dell'amministrazione pubblica nell'era dei big data e dell'intelligenza artificiale*, presented at *Associazione Italiana Professori di Diritto Amministrativo Conference*, 2019, in www.dirittoamministrativo.org; B. Caravita di Toritto, *Principi costituzionali e intelligenza artificiale*, in U. Ruffolo (ed.), *Intelligenza artificiale: il diritto, i diritti, l'etica*, Milan, Giuffrè, 2020, 451; G. Fasano, *L'intelligenza artificiale nella cura dell'interesse generale*, in *Giornale di diritto amministrativo*, n. 6, 2020, 715; C. Benetazzo, *Intelligenza artificiale e nuove forme di Intelligenza artificiale e nuove forme di interazione tra cittadino e pubblica amministrazione*, in *Federalismi.it*, n. 16, 2020, 24; P.S. Maglione, *La Pubblica Amministrazione "al varco" dell'Industria 4.0: decisioni automatizzate e garanzie procedurali in una prospettiva human oriented*, in *Amministrazioneincammino.it*, 2020; D. Marongiu, *L'intelligenza artificiale "istituzionale": limiti (attuali) e potenzialità*, in *European Review of Digital Administration & Law*, n. 1, 2020, 37; R. Cavallo Perin, *Ragionando come se la digitalizzazione fosse data*, in *Diritto amministrativo*, n. 2, 2020, 305; F. Patroni Griffi, *Intelligenza artificiale: amministrazione e giurisdizione*, *Intelligenza artificiale*, in *Il diritto, i diritti, l'etica*, 2020, 475; B. Raganelli, *Decisioni pubbliche e algoritmi: modelli alternativi di dialogo tra forme di intelligenza diverse nell'assunzione di decisioni amministrative*, in *Federalismi.it*, n. 22, 2020; A. Cassatella, *La discrezionalità amministrativa nell'età digitale*, in *Scritti per Franco Gaetano Scoca*, vol. I, Vv.Aa., Napoli, Editoriale Scientifica, 2021, 675; A. Barone, *Amministrazione del rischio e intelligenza artificiale*, in *European Review of Digital Administration & Law*, n. 1, 2020, 63; G. Pesce, *Funzione amministrativa, intelligenza artificiale e*

fact, the public administration increasingly uses AI to carry out its numerous and complex tasks, taking advantage of those benefits that for years have been a prerogative only of the private sector. As a result of this growing trend, most of the national AI strategies launched by States to define their approach to the development and use of AI also concern the public sector⁶.

blockchain, Napoli, Editoriale Scientifica, 2021.

⁵ AI is based on algorithms, computational techniques capable of replicating human behavior. Made up of a finite sequence of operations (instructions), they learn information, translate or interpret written or spoken human languages and solve complex problems through logic or reasoning. For a definition of algorithm see the entry *Algorithm*, in *Encyclopaedia Britannica – Micropaedia*, 1985. Regarding algorithms and Law, especially Administrative Law: E. Carloni, *Algoritmi su carta*, 363; A. Celotto, *Come regolare gli algoritmi. Il difficile bilanciamento tra scienza, etica e diritto*, in *Analisi Giuridica dell'Economia*, issue 1, 2019, 47; B. Carotti, *Algoritmi e poteri pubblici: un rapporto incendiario*, in *Giornale di diritto amministrativo*, n. 1, 2020, 5; G. Marchianò, *La legalità algoritmica nella giurisprudenza amministrativa*, in *Diritto dell'economia*, n. 3, 2020, 229. AI and in particular algorithms are also valuable for all or almost all of the other activities of the public administration. In fact, they intervene in many areas of administrative activity, from the conservation and storage of data to controls, communication, participation and the preparation of technical decision-making contents. In this regard, the progress of AI has allowed the transition from the function of collecting and cataloging documents to the processing and adoption of legal acts, including administrative ones, using computers and algorithms, but not without a series of problems. On the algorithms and their use both in the preliminary and decision-making phase, as well as in the effectiveness integrative phase, and in both bound and discretionary activities, R. Cavallo Perin, *Pubblica amministrazione e data analysis*, in R. Cavallo Perin (ed.), *L'amministrazione pubblica con i big data: da Torino un dibattito sull'intelligenza artificiale*, Turin, 2021, 16 and 17.

⁶ According to an OECD mapping on AI, fifty countries (including the EU) have introduced national AI strategies. Thirty-six of these have adopted specific strategies for AI in the public sector. See www.oecd-ilibrary.org/docserver/726fd39den.pdf?expires=1614757709&id=id&accname=guest&checksum=4E57037FE90FC8105CF2F3ACC49AF39511. In March 2018, the Italian Task Force on AI, led by the Agency for Digital Italy (Agenzia per l'Italia digitale), published the white paper "*L'intelligenza artificiale al servizio dei cittadini*" ("*Artificial intelligence at the service of citizens*"). The document discusses the key challenges related to the implementation of AI in the public sector and makes a series of recommendations on how the government can overcome them by facilitating the adoption of technologies by the State in order to improve services to citizens and businesses. In addition, many countries are financing projects that concern the public sector (for example Finland, Italy, Portugal and Slovenia in 2019 have committed themselves to allocate more than 10 million euros each for projects of this type). See Berryhill, K.K. Heang, R. Clogher and K.

The “expansion” of AI in the public sector, today indispensable and natural, required but also suffered and feared, is mainly due to the numerous benefits that it is able to offer or in any case it promises⁷. Among these benefits first of all there is that of improving the services provided, especially those characterized by repetitiveness or by a particular complexity⁸, in terms of subjects involved, territorial areas concerned and necessary technical characteristics⁹. Thanks to the application of AI, these services can in fact be provided in a more rapid, continuous and efficient way, optimizing the use of human and material resources and therefore reducing costs, relating not only to the transaction, but also and above all to the collection and analysis of information and data.

More specifically, the improvement of the provision of public services is possible and pursued through a number of factors. These include the automation of routine government and administrative processes and the coordination in public administration, as well as the ability of AI to analyze huge amounts of data, to weigh more variables in making complex decisions while eliminating human errors, to allow greater user participation, to personalize services and to make them more accurate¹⁰.

McBride, *Hello, World: Artificial Intelligence*, 75.

⁷ At the European level, for example, see the report AI Watch, *Artificial Intelligence in public services, Overview of the use and impact of AI in public services in the EU*, 2020. In this report, the European Commission, in mapping the use of AI in public services within the Member States, concludes that “governments across the EU are exploring the potential of AI use to improve policy design and evaluation, while reorganising the internal management of public administrations at all levels. Indeed, when used in a responsible way, the combination of new, large data sources with advanced machine learning algorithms could radically improve the operating methods of the public sector, thus paving the way to pro-active public service delivery models and relieving resource constrained organisations from mundane and repetitive tasks”.

⁸ See A. Masucci, *Digitalizzazione dell'amministrazione e servizi pubblici on line*, in *Diritto pubblico*, n. 1, 2019, 117.

⁹ G. Avanzini, *Decisioni amministrative e algoritmi informatici*, 80.

¹⁰ O. Capdeferro Villagrasa, *La inteligencia artificial del sector público: desarrollo y regulación de la actuación administrativa inteligente en la cuarta revolución industrial*, in *Revista de internet, derecho y política*, n. 30, 2020, 1, especially 4, which also highlights how the use and reuse by people of the large amount of public sector data have great potential as

As a result of the foregoing, and as it will be better seen later, AI is able to allow public administration to improve its relationship with the individuals, providing them with more prompt and better assistance and greater guarantees. This happens, as mentioned, also thanks to the use of big data¹¹, collected

factors of a transformative effect in all sectors of the economy. An example of the use of AI in the public sector is Paraná Inteligência Artificial (PIA), launched in 2019 to reduce bureaucracy, simplify and allow citizens access to state public services. PIA consists of a platform and an application that brings together over 380 services, and also acts as a channel for dialogue between the state government and the population. To use the system, it is sufficient to access the platform or application and to ask questions to the “PIA” assistant. It is also possible to use voice commands and if the user provides his own tax code, the level of customization of the services increases, since the system knows who it is communicating with. Furthermore, AI systems can also be used by citizens to check the acts carried out by public entities, as in the case of the Brazilian Operação Serenata de Amor, which through AI analyzes public expenses, mainly those reimbursed for the exercise of the parliamentary activity of federal deputies and senators. The robot responsible for scanning the data is called Rosie. So that the population can understand the information generated by Rosie, on the specific website “Jarbas” it is possible to view the expenses and details of each suspect found. See in this regard D. Desordi and C. Della Bona, *A inteligência artificial*, 15-16. On the further effects of the use of AI expected in the future, see *AI Watch – Artificial Intelligence for the public sector, Report of the “1st Peer Learning Workshop on the use and impact of AI in public services”*, Brussels, 11-12 February 2020, according to which “it is expected that the long-term effects of using AI in the public sector will cause the following direct and indirect impacts, in addition to higher efficiency of services: (i) Real-time feedback on governmental portals - via AI/automated services, as it becomes easier to provide and collect real time feedback; (ii) Time savings through digital services; (iii) Prevention / prediction – AI use to create more predictive services (debt relief for example); (iv) Dissemination of the use of new technologies by citizens; (v) Inclusiveness (of services) through equal offering and equal (because AI-based) interaction; (vi) Quality of life – increased societal value and even poverty reduction”.

¹¹ Big data refers to a huge set of data, attributable to different sources and which flow with such rapidity that compared to them the traditional tools for storing and processing data are obsolete. Regarding big data and administrative activity: D.U. Galetta, *Open-Government, open-data e Azione Amministrativa*, in *Le Istituzioni del Federalismo*, n. 3, 2019, 674; F. de Leonardis, *Big data, decisioni amministrative e “povertà” di risorse della pubblica Amministrazione*, in E. Calzolaio (ed.), *La decisione nel prisma dell'intelligenza artificiale*, Milan Padova, Wolters Kluwer Cedam, 2020, 152; F. Costantino, *Lampi. Nuove frontiere delle decisioni amministrative tra open e big data*, in *Diritto amministrativo*, n. 4, 2017, 799; G. Carullo, *Big data e pubblica amministrazione nell'era delle banche interconnesse*, in *Concorrenza e mercato*, n. 23, 2016, 181; M. Falcone, *“Big data” e pubbliche*

through the detection of information on habits, interests, behaviors and preferences of citizens and businesses, and used by public administration (also) to increase the efficiency of its services¹².

The foregoing assumes particular relevance especially when public administration has to solve specific problems in critical areas such as health, transport and security, or even as school or judicial system.

With regard to health, for example, AI is able to anticipate risk factors by allowing the introduction of preventive measures, helps to interpret the results of the analyzes, suggests diagnoses, allows the development of highly individualized treatment programs as well as to identify potential pandemics early¹³. Again for example, but with regard to public transport, through special traffic detection sensors the AI allows for more effective and timely circulation of public transport, optimizing travel in real time and redistributing passenger flows¹⁴. There are

also many applications of AI with reference to security, both physical and IT, such as when AI is used to locate suspected criminals, to detect fraud, to carry out biometric identification and to verify any precedents, to improve video surveillance and image research and to detect and block cyber attacks¹⁵. With regard to education, AI, for example, allows the continuous evaluation of performance, the automatic evaluation of students and the optimization of learning. With regard to the judicial sector, AI can find application as a “thinking machine” in the context of the so-called “predictive justice”, that is to make predictions on the outcome of a case, or also, in the future, to assist the judge in the decision-making phase¹⁶.

The advantages that can be derived in the public sector from the use of AI must not be misleading. In fact, despite the many benefits AI is able to offer, it also brings numerous risks, legal but also ethical¹⁷. These risks cannot be underestimated: in fact, new technologies have an impact on society of such magnitude as to endanger even the

Amministrazioni: nuove prospettive per la funzione conoscitiva pubblica, in *Rivista trimestrale di diritto pubblico*, n. 3, 2017, 601.

¹² D.U. Galetta, *Algoritmi, procedimento amministrativo e garanzie: brevi riflessioni, anche alla luce degli ultimi arresti giurisprudenziali in materia*, in *Rivista italiana di diritto pubblico comunitario*, n. 3, 2020, 501. See also G. Carullo, *Gestione, fruizione e diffusione dei dati dell'amministrazione digitale e funzione amministrativa*, Turin, Giappichelli, 2017.

¹³ In J. Berryhill, K.K. Heang, R. Clogher and K. McBride, *Hello, World: Artificial Intelligence*, 78, that shows as a practical example the Precision Medicine Initiative (PMI) program, launched in the USA in 2015, which, through new technologies and algorithms, allows to sequence the DNA of patients quickly and at affordable costs and to carry out a detailed molecular characterization of diseases and cancers, enabling clinicians to adopt the best choices and the most effective treatment programs for the direct benefit of patients. Furthermore, in Italy a home telemonitoring system has been adopted for patients suffering from chronic obstructive pulmonary disease, which makes use of machine learning (see below) and involves the Processing and Bioinformatics Systems Unit (Unità di Sistemi di Elaborazione e Bioinformatica) of the Rome Biomedical Campus and the Campus Biomedico University Hospital in Rome. Thanks to a pulse oximeter connected to an app, this system is able to detect potentially dangerous events for patients, receiving data on heart rate and hemoglobin saturation three times a day. In the field of general health, robotic medicine makes use of AI. See I. Masi, *L'intelligenza artificiale al servizio della pubblica amministrazione 2.0*, in *Diritto.it*, 2017.

¹⁴ J. Berryhill, K.K. Heang, R. Clogher and K. McBride, *Hello, World: Artificial Intelligence*, 80 and 82, which shows, as an example, the project implemented in Portugal aimed at minimizing the response time of the emergency medical service vehicles, using predictive

models capable of anticipating the demand for the service by combining existing historical data and context-sensitive data from various sources, like weather, allowing a more strategic use of the aforementioned means. Also in Portugal, in 2019 the ePortugal program was launched, the new portal of public services, accompanied by Sigma, a virtual assistant active twenty-four hours a day, seven days a week, which provides written answers to questions frequently asked by citizens. If Sigma deems its answer inadequate, it asks the user if he or she wants to speak to a human person and in this case connects them by phone or e-mail depending on the user's preference. An AI system applied to road traffic has also been adopted in Los Angeles: G. Pesce, *Funzione amministrativa, intelligenza artificiale e blockchain*, 83.

¹⁵ For example, the facial recognition systems used in a number of cities around the world to help locate suspected criminals and counter terrorism. Among the various cases of practical application, Thailand uses AI to monitor network traffic and conduct big data analyzes to detect suspicious user behavior (i.e. two unusual logins with the same credentials, but hundreds of kilometers away). Again, in relation to security, AI comes into play when drones are used in the event of a gathering or general control of the territory.

¹⁶ See C. Valentino, *La silenziosa rivoluzione dell'intelligenza artificiale anche nei sistemi giudiziari*, in *Diritto.it*, 2021; L. Viola (ed.), *Giustizia predittiva e interpretazione della legge con modelli matematici. Atti del Convegno tenutosi presso l'Istituto dell'Enciclopedia Italiana Treccani*, Milan, Diritto Avanzato, 2019.

¹⁷ In this regard, the European Commission has recently adopted the “*Ethics Guidelines for Trustworthy AI*” (2019), aimed at providing guidance on how to design and implement AI systems in an ethical and reliable way. See *infra*, para. 2.

democratic values and human rights on which the society is founded, risking to shake it from its roots. In particular, the possible risks include, for example, opaque, discriminatory or prejudicial implementations, consequently jeopardizing legal security, rights and privacy protection. Another risk may be that of neglecting compliance with the cardinal principles of administrative action, such as obligation of publicity, transparency, motivation, reasonableness, proportionality, generating problematic short circuits in the performance of administrative activities and in the provision of services¹⁸. In summary, there is the danger, especially alarming in the public sector, that, if misused, AI gives rise to negative and harmful effects above all for citizens, instead of producing the desired positive effects.

Before proceeding with the investigation, in order to better understand how AI behaves in relation to the public sector and what the problems that affect AI when it comes into contact with the mentioned sector are, it seems appropriate to distinguish between generic AI (also called “strong” or “general” AI) and specific AI (also called “weak” AI).

Strong AI takes on the characteristics of a mind and has a cognitive capacity no different from that of humans. It is aimed at the construction of systems capable of performing individual tasks or aspects of them and can be used in the “provisional” administration as it allows to respect the guarantees of the administrative proceeding. It is considered more “elementary” as it refers to instruction sequences uniquely predetermined in order to carry out an activity effectively¹⁹.

¹⁸ O. Capdeferro Villagrasa, *La inteligencia artificial del sector público: desarrollo y regulación de la actuación administrativa inteligente en la cuarta revolución industrial*, 9. About the Italian case law on the compatibility of information technologies with the principles of administrative action: Council of State, section VI, decisions of 4 February 2020, n. 881; 13 December 2019, n. 8472; 8 April 2019, n. 2270.

¹⁹ G. Marchianò, *Intelligenza artificiale: IA specifiche e l'amministrazione provvedimentale – IA generali e i servizi pubblici*, in *Federalismi.it*, n. 11, 2021, 137; G. Sartor and F. Lagioia, *Le decisioni algoritmiche tra etica e diritto*, in *Intelligenza artificiale - il diritto, i diritti, l'etica*, 2020, 66; D.U. Galetta and J.G. Corvalán, *Intelligenza Artificiale per una Pubblica Amministrazione 4.0? Potenzialità, rischi e sfide della rivoluzione tecnologica in atto*, 10, according to which there are three different levels of automation that can affect the integration with the public agent and / or with the citizen. The first level is that of complete automation, in which algorithms automatically link data

Weak AI, on the other hand, consists in a simulation (and not in a duplication or in an overcoming) of real intelligence, that is, it acts and thinks as if it had a brain, and aims to create systems suitable for acquiring most of the human cognitive abilities and successfully act in some of its complex functions. In particular, it investigates similar cases, comparing them, elaborating a series of solutions and finally choosing the most congruous and rational one. Weak AI is unable to “think” autonomously, but to carry out its task it needs the presence of man. The public administration uses this type of technology to provide its services in numerous sectors, from medicine to water, from city cars to the construction of robots capable of carrying out a series of support activities for public administration²⁰.

2. Global public services and government initiatives for AI in the public sector

The study concerning AI and public services cannot ignore, in addition to a definition of AI, the understanding of what is

and information with documents, using rules-based AI systems. The second level is that in which automation is combined with reduced human intervention, necessary to complete the creation of a document (for example because parts of a document require constant updates that cannot be automated or because it is more convenient for a human operator to intervene by placing questions or interacting with the system). Finally, the third level is that of automation combined with prediction. Machine learning is an AI technique, which can be defined as follows: “one or more algorithms detect a lot of data in order to establish models, which are then translated into predictions, based on some statistical criteria” (unofficial translation).

²⁰ G. Marchianò, *Intelligenza artificiale: IA specifiche e l'amministrazione provvedimentale – IA generali e i servizi pubblici*, 146, according to which the weak AI is characterized by exercising three functions, namely the forfeiture of data, the processing and storage of them, and the autonomous ability to learn, resulting in the ability to improve itself with exponential progression. However, this character gives rise to problems and challenges for the future, as well as heated debates between those who fear creating super intelligent entities and those who enhance the ability of AI to solve humanity's problems and overcome human biological limits. On the distinction between strong and weak AI, see also J. Berryhill, K.K. Heang, R. Clogher and K. McBride, *Hello, World: Artificial Intelligence*, 13, according to which strong AI refers to the idea that general human intelligence can be overcome by machines (generating the risk and fear that the interests of such an AI system are not necessarily aligned with those of humanity), while until now there would be only weak AI, as no algorithm, computer or machine is capable of outperforming humans in a large amount of tasks.

meant by public services.

The matter is not trivial. In fact, at national level, the concept of public service can vary in different States and is not always clear²¹. In a global perspective the concept can have a different meaning. For example, many of what in Italy are defined as public functions, on a global level are instead classified among public services. According to the indications of the UN²², in fact, public services include,

²¹ For example, in the Italian legal system it is not clear what public service is and in this regard in doctrine different orientations can be distinguished. According to a first subjective approach, public services are only the activities of production of goods and services managed directly or indirectly by public entities. According to an objective approach, public services are activities aimed at public purposes and regulated by public law, even if they are also performed by private subjects. On the notion of public service, *ex multis*: A. De Valles, *I servizi pubblici*, in *Primo trattato completo di diritto amministrativo italiano*, vol. VI, part I, V.E. Orlando (ed.), Milan, Società Editrice Libreria, 1930, 377; U. Pototschnig, *I pubblici servizi*, Padova, Cedam, 1964; F. Merusi, (entry) *Servizio pubblico*, in *Novissimo Digesto Italiano*, vol. XVII, 1970, 215; S. Cattaneo, (entry) *Servizi pubblici*, in *Enciclopedia del diritto*, vol. XLII, 1990, 355; P. Ciriello, (entry) *Servizi pubblici*, in *Enciclopedia Giuridica Treccani*, vol. XXVIII, 1992, 1; G.M. Racca, *I servizi pubblici nell'ordinamento comunitario*, in *Diritto amministrativo*, 1994, 201, later in *La concessione di pubblico servizio*, G. Pericu, A. Romano and V. Spagnuolo Vigorita (ed.), Milan, Giuffrè, 1995, 201; F. Giglioni, *Osservazioni sulla evoluzione della nozione di "servizio pubblico"*, in *Foro amministrativo*, 1998, 2265; A. Pioggia, *Appunti per uno studio sulla nozione di pubblico servizio: i limiti e i requisiti dell'assunzione del servizio pubblico da parte dell'ente locale*, in *Quaderni del Pluralismo*, 1998, 175; S. Cassese, *Dalla vecchia alla nuova disciplina dei servizi pubblici*, in *Rassegna giuridica dell'energia elettrica*, vol. 2-3, 1998, 233; Id., *La nuova costituzione economica*, Bari, Laterza, 2000, 83; V. Cerulli Irelli, *Corso di diritto amministrativo*, Turin, Giappichelli, 2000, 47; F. Salvia, *I servizi pubblici nella letteratura recente*, in *Nuove autonomie*, 2001, 7991; L.R. Perfetti, *Contributo ad una teoria dei pubblici servizi*, Padova, Cedam, 2001; V. De Falco, *Il servizio pubblico tra ordinamento comunitario e diritti interni*, Padova, Cedam, 2003; G. Caia, *La disciplina dei servizi pubblici*, in L. Mazzarolli, G. Pericu, A. Romano, F. Roversi Monaco and F.G. Scoca (ed.), *Diritto amministrativo*, Bologna, Monduzzi, 2005; G. Napolitano, (entry) *Servizi pubblici*, in S. Cassese (dir. by), *Dizionario di diritto pubblico*, Milan, vol. VI, 2006, 5517.

²² The reference is to the CPC nomenclature (common classification of products) of the United Nations. The indications of the UN have been implemented by the Council Directive 92/50/EEC of 18 June 1992 relating to the coordination of procedures for the award of public service contracts, no longer in effect. In particular, Annexes IA and IB of the aforementioned directive referred to the mentioned nomenclature. Currently, at EU level, reference is made to the Common Procurement Vocabulary (CPV) adopted by Regulation (EC) No 2195/2002 of the European

for example, security, finance and public education. Therefore, in investigating the use of AI by public power, it is necessary to extend the analysis to these sectors as well, wondering how the aforementioned use can be carried out to protect citizens, their rights and the services that they are entitled to, as well as to protect democracy.

It should also be noted that when reference is made to public services affected by the application of new technologies, it is intended to indicate the information activity, the new form in which traditional functions are exercised, and the facilitating tools for the provision of traditional public services, which in themselves cannot be digitized, but in relation to which technology facilitates the relationship between the service manager and the user²³.

Having clarified the foregoing, the public sector lags behind the private sector in terms of use of AI. Governments are attempting to bridge this gap by adopting a series of dedicated projects, acts, policies, declarations and regulations.

For example, approximately forty countries have adopted specific strategies concerning the use of AI in the public sector²⁴, encouraging its development while safeguarding interests and rights with which such use could conflict²⁵.

Furthermore, in Italy, in implementation of the Digital Administration Code (Codice dell'Amministrazione Digitale, CAD)²⁶,

Parliament and of the Council of 5 November 2002 on the Common Procurement Vocabulary (CPV), a hierarchically structured nomenclature divided into divisions, groups, classes, categories and sub-categories. See recital 119 of Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC.

²³ In this sense G. Pesce, *Digital First*, Napoli, Editoriale Scientifica, 2018, 137.

²⁴ As seen above, according to a mapping on AI carried out by the OECD, fifty countries (including the EU) have introduced national AI strategies. Thirty-six of these have adopted specific strategies for AI in the public sector.

²⁵ Council of Europe, *Ad Hoc Committee on Artificial Intelligence (CAHAI), Policy Development Group, CAHAI-PDG(2021)03*, 7. See also O. Capdeferro Villagrasa, *La inteligencia artificial del sector público: desarrollo y regulación de la actuación administrativa inteligente en la cuarta revolución industrial*, 3.

²⁶ Legislative Decree 7 March 2005, No. 82, art. 14-bis. On the Italian Digital Administration Code, *ex multis*, F. Cardarelli, *Amministrazione digitale, trasparenza e principio di legalità*, in *Diritto dell'informazione e dell'informatica*, 2015, 227; Id., *Codice*

which applies among other things to public service providers²⁷, the three-year *Plan for information technology in public administration* was adopted in 2020. Drafted by the Agency for Digital Italy (Agenzia per l'Italia Digitale)²⁸, the Plan sets the objectives and identifies the main development and management interventions of the information systems of public administrations²⁹. In particular, in order to carry out the actions envisaged by the previous plans, this Plan pursues a series of objectives. First of all, it is aimed at fostering the development of a digital society, where services put citizens and businesses first, through the digitization of public administration which is the engine of development for the whole country. Secondly, it tends to promote sustainable, ethical and inclusive development, through innovation and digitization in the service of people, communities and territories, while respecting environmental sustainability. Finally, it aims to contribute to the dissemination of new digital technologies in the Italian productive system, encouraging standardization, innovation and experimentation in the field of public services. Previously, at the end of 2019, the *Strategy for technological innovation and digitalisation of the country* was adopted, which addresses three main “challenges”, namely the digitization of society, the innovation of the country and the sustainable and ethical development of society as a whole. In supporting these challenges, the Strategy outlines a general process of structural transformation of the country, which involves, in addition to digital infrastructures and to the collaboration between public and private sectors in generating innovation, also public administration services³⁰. Even earlier, in

2018, the Agency for Digital Italy adopted the *White Paper on Artificial Intelligence at the Service of the Citizen (Libro Bianco sull'Intelligenza artificiale al servizio del Cittadino)*. This is a soft law act, not binding, which examines the most advanced information technologies impact on social relations and on the traditional model of administrative activity, and which addresses the issue of automating administrative activities with the use of AI to improve public services and the relationship between public administration and citizens³¹.

At the EU level, in 2018 the European Commission adopted an AI strategy³², which

see the report of the Research Department of the Italian Chamber of Deputies, *La transizione digitale della pubblica amministrazione*, 2021.

³¹ Agency for Digital Italy, *Libro Bianco sull'Intelligenza Artificiale al servizio del Cittadino*, March 2018, in <https://ia.italia.it/assets/librobianco.pdf>. About it M. Tresca, *I primi passi verso l'Intelligenza Artificiale al servizio del cittadino: brevi note sul Libro Bianco dell'Agenzia per l'Italia digitale*, in *Medialaws - Rivista di diritto dei media*, n. 3, 2018, 1; A. Sola, *L'automatizzazione dell'azione amministrativa*, in *Amministrazione in Cammino*, 2020, 1, especially 9. It should also be considered that, again with regard to Italy, the Legislative Decree 1 March 2021, No. 22, provides that the Prime Minister will promote, guide and coordinate government action in various matters, including the digitization of public administrations. This digitization plays a central role in the National Recovery and Resilience Plan (NRRP). In fact, digitization, innovation and security in the public administration is one of the three components of the first mission of the NRRP, precisely called “*Digitization, innovation, competitiveness and culture*”. The spread of digital administration has been promoted and pursued with a series of regulatory acts, such as the 2020 budget law, the Legislative Decree No. 162/2019, and the Law Decree No. 76/2020 containing urgent measures for simplification and digital innovation. These interventions have allowed Italy to improve the level of effectiveness and digitization of the public administration, in particular by investing in skills, accelerating digitization and increasing the efficiency of local public services. Thus *European Commission, Country Report Italy 2020*, February 26, 2020. In Italy, the binding legal framework for the use of AI software in the public law sector appears to be incomplete, however. In fact, art. 3-bis, Law 7 August 1990, No. 241, as amended by Legislative Decree 16 July 2020, No. 76, provides only that to achieve greater efficiency in their activities, public administrations act by means of IT and telematic tools, in internal relations, between the various administrations and between these and private individuals. While art. 50-ter, Legislative Decree No. 82/2005 establishes a National Digital Data Platform, regulating the use of information technologies only in terms of the interconnection of information systems of public administrations.

³² European Commission, *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and*

dell'amministrazione digitale, Rome, Treccani, 2017, 211.

²⁷ Pursuant to art. 2, para. 2, lett. b), of the Italian Digital Administration Code, the provisions of the latter apply to public service managers, including listed companies, in relation to services of public interest.

²⁸ The Agency for Digital Italy was established with the Legislative Decree 22 June 2012, No. 83, with the aim, among others, of implementing the objectives of the Italian Digital Agenda for the promotion and dissemination of digital technologies in the country.

²⁹ This Plan is approved by the Prime Minister or by the minister delegated for computerization. In addition to the drafting of the Plan, the Agency for Digital Italy is also entrusted with verifying its implementation.

³⁰ On the three-year plan for information technology in the public administration and on the strategy for technological innovation and digitization of the country,

addresses the socio-economic aspects of AI, both private and public, and, also based on awareness of the ability of AI to transform public services, elaborates a coordinated plan for the alignment of strategies aimed at promoting the development of AI in Europe³³. In 2019, the Commission adopted the *Ethics Guidelines for Trustworthy AI*. The Guidelines are aimed at providing guidance on how to design and implement AI systems in an ethical and reliable way and are based on the following four principles: (i) respect for human autonomy; (ii) prevention of harm; (iii) fairness; (iv) explicability processes³⁴. At the beginning of 2020, the Commission published the *White Paper On Artificial Intelligence - A European approach to excellence and trust*³⁵, with which the foundations are laid for the protection of consumer rights and for the promotion of innovation in the field of AI. Based on the consideration that different and unrelated national initiatives risk compromising legal certainty, weakening citizens' confidence and hindering the emergence of a dynamic European industry, with this White Paper the Commission points out the opportunity to opt, with regard to AI, for a common European approach of such dimensions as to prevent the fragmentation of the single market. To this end, it is considered necessary to adopt a specific strategic framework, in order to establish measures aimed at aligning efforts at European, national and regional level and, through a partnership between public and private sectors, to mobilize resources to achieve an "ecosystem of excellence" along the entire value chain

Social Committee and the Committee of the Regions, Artificial Intelligence for Europe, COM(2018) 237, 25 April 2018.

³³ European Commission, *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, Coordinated Plan on Artificial Intelligence*, COM(2018) 795, 7 December 2018.

³⁴ The *Ethics Guidelines for Trustworthy AI* have been developed by the Commission High-Level Expert Group on Artificial Intelligence (AI HLEG), composed of 52 artificial intelligence experts from academia, civil society and industry. In drafting the document, the group considered various issues, such as equity, security, transparency, future of work, democracy, privacy and protection of personal data, dignity and non-discrimination, and started from the assumption that the ethics of AI is based on fundamental human rights.

³⁵ European Commission, *White Paper On Artificial Intelligence - A European approach to excellence and trust*, COM(2020) 65, 19 February 2020.

and create the right incentives to accelerate the adoption of AI-based solutions³⁶. Still in the EU area, in April 2021 a proposal for a regulation was presented to regulate the use of AI technologies (*AI Act*). The purpose of this proposal is to outline a path for the development and use of AI systems that aims to promote both innovation and fundamental rights of people, as well as to establish an appropriate and uniform legal framework and to impose on Member States a series of objectives relevant to the public interest, with the more general intention of guaranteeing the reliability of new technologies³⁷.

³⁶ G. Marchianò, *Intelligenza artificiale: IA specifiche e l'amministrazione provvedimentale - IA generali e i servizi pubblici*, 141.

³⁷ European Commission, *Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, COM(2021) 206, 21 April 2021. According to recital 37, another area in which the use of AI systems deserves special consideration is the access to and enjoyment of certain essential private and public services and benefits necessary for people to fully participate in society or to improve one's standard of living. In this regard it is considered that "AI systems used to evaluate the credit score or creditworthiness of natural persons should be classified as high-risk AI systems, since they determine those persons' access to financial resources or essential services such as housing, electricity, and telecommunication services. AI systems used for this purpose may lead to discrimination (...) or create new forms of discriminatory impacts. Considering the very limited scale of the impact and the available alternatives on the market, it is appropriate to exempt AI systems for the purpose of creditworthiness assessment and credit scoring when put into service by small-scale providers for their own use. Natural persons applying for or receiving public assistance benefits and services from public authorities are typically dependent on those benefits and services and in a vulnerable position in relation to the responsible authorities. If AI systems are used for determining whether such benefits and services should be denied, reduced, revoked or reclaimed by authorities, they may have a significant impact on persons' livelihood and may infringe their fundamental rights, such as the right to social protection, non-discrimination, human dignity or an effective remedy. Those systems should therefore be classified as high-risk. Nonetheless, this Regulation should not hamper the development and use of innovative approaches in the public administration, which would stand to benefit from a wider use of compliant and safe AI systems, provided that those systems do not entail a high risk to legal and natural persons. Finally, AI systems used to dispatch or establish priority in the dispatching of emergency first response services should also be classified as high-risk since they make decisions in very critical situations for the life and health of persons and their property". In the EU, the General Data Protection Regulation (GDPR) No. 2016/679 had already regulated the use of AI, but in relation to judicial decisions, prohibiting the adoption of automated decisions without human intervention.

Despite the efforts, however, governments still do not seem adequately prepared to face challenges characterized by a high level of specificity both on a practical and regulatory level. There continues to be a lack of uniform legislation in relation to the use of AI in the public sector³⁸ and this is likely to cause dysfunctions and problems. In fact, AI is capable of having a transformative and disruptive impact on the way in which public services are provided, potentially causing great complexity, profound uncertainty and high risk. Precisely for this reason, it appears necessary to design a legal framework as uniform and complete as possible, which allows the administration to fully and positively realize the transformative potential of AI on public services, at the same time gaining the trust of citizens in its ability in this regard.

3. Improvements between levels of governance and between public powers and private subjects

It has already been noted that the use of AI in the public sector can lead to a number of significant improvements. These can affect both the relations between the different levels of government and the relations between public powers and private subjects.

From the first point of view, the use of AI can allow greater coordination between levels of government. The use of AI and algorithms can in fact have the effect of favoring and improving collaboration between administrations and institutions, while also saving both time and economic resources, and distributing the related benefits to all the public sector. Thanks to AI, administrations and institutions are able to communicate better with each other and, consequently, to perform better, more efficiently and ultimately more in line with the needs of citizens, also eliminating or at least reducing duplications of activities³⁹. Better coordination between levels of government – while always respecting their autonomy – appears increasingly important in contemporary systems, which are increasingly complex and articulated, composed of a

multitude of bodies and laws which have stratified over time. Furthermore, thanks to the use of AI in the public sector, it is possible to facilitate the identification of the best level of government where to allocate the public function. In fact, specific algorithms can help determine at which level a public function can be best performed, that is, which level of government is able with its action to better satisfy the underlying public interest and perform the aforementioned function more efficiently.

From the second point of view, the use of AI is able to facilitate relations between public powers and private entities, as regards the exercise of democracy, the access to data and public services, and the quality of these. In fact, the public sector algorithmization process has the aim (also and perhaps above all) to bring the administration closer to the citizens by promoting, among other things, democracy⁴⁰, participation, collaboration with administrations and institutions and the elimination of unnecessary steps. Thanks to AI it is possible to create a new relational module that involves the citizen-user on the one hand and the public administration on the other, and that is not only more efficient and faster, but also more integrated and collaborative, and ultimately more democratic. For example, by increasing the ability of users to access public services and share information about them, AI can contribute to the improvement of these services, facilitating a transformation in a collaborative sense and

⁴⁰ In this regard, see *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2030 Digital Compass: the European way for the Digital Decade*, COM (2021) 118, 9 March 2021, with which the European Commission presented a vision and perspectives for the digital transformation of Europe by 2030 and according to which the correct application of AI to public services, according to adequate standards, indicators and regulations, makes these services more democratic. In particular, in relation to the Digitalisation of public services sector (one of the four sectors that make up Europe's digital compass), the EU's objective is to ensure that democratic life and online public services are fully accessible to all by 2030, including people with disabilities, creating a digital environment that provides easy-to-use, efficient and personalized tools with high standards of security and privacy. Furthermore, ensuring electronic voting would encourage greater participation of citizens in democratic life. In particular, the following objectives are to be achieved by 2030: (i) fundamental public services: 100% online; (ii) online health: medical records available at 100%; (iii) digital identity: used by 80% of citizens.

³⁸ Council of Europe, *Ad Hoc Committee on Artificial Intelligence (CAHAI), Policy Development Group, CAHAI-PDG(2021)03*, 7.

³⁹ G. Pesce, *Digital First*, 128, in which it is believed that the application of AI to the public sector can only entail, at least at the communication level, a certain centralization of information and procedures.

improving the relationship between public authorities and private subjects. The possibility that citizens and businesses cooperate in the formulation of the general technical rules for the use of AI, and therefore in a moment before their application, also can have a positive impact on the provision of public services. It is a model of wide participation that allows to solve more easily the critical issues connected to the opacity or irrationality of the algorithm, also enabling to prevent litigation⁴¹, and which – thanks to a human-centric approach – transforms public services making them more in line with user needs.

In order to ensure that the foregoing occurs correctly, and in particular so that citizens are guaranteed adequate and effective protection, in the use of AI the public administration must not depart from the general principles that govern its action, such as for example publicity and transparency⁴². Compliance with these principles appears necessary also in order that citizens perceive the use of new technologies within the public sector as

reliable. In fact, only fair and responsible processes and structures help to realize the potential of AI in transforming public services, operation for which it is essential to enjoy the trust of citizens⁴³.

With regard to the aforementioned principles, the transparency of the algorithms and the publicity of the related decision-making processes require to ensure that citizens are able to know when the algorithms are used, to ask for explanations about their functioning, and to identify the AI system and the institution that is responsible for it⁴⁴. Not unlike other public administration decisions, decisions made on the basis of AI must in fact be fully understood and explainable to recipients for accountability reasons. The opacity in the use of AI in the public sector, on the other hand, limits the ability of public administration to justify the decisions made, to monitor and to correct them⁴⁵. The lack of transparency and accountability entails not only ethical, but also political and legal consequences, since citizens could reasonably have difficulty accepting and executing the decisions thus made.

As anticipated, in order for there to be transparency in the use of AI, it is essential that algorithms be traceable and explainable. This means that it must be possible to understand the decision-making process of the machine, especially when its operation has a strong impact on people's lives. To this end, the reasoning behind the result produced by the machine must be made public in a clear and understandable language. However, it is

⁴¹ An example of such a system can be found in the United Kingdom where the public administration develops and publishes programs relating to the use of AI in sectors such as education and health. The public administration then revokes them in the not uncommon case in which law firms propose administrative appeals for any discriminatory effects or for the irrationality of the programs presented. See on this point M. Finck, *Automated Decision-Making and Administrative Law*, in P. Cane et al. (eds.), *The Oxford Handbook on Comparative Administrative Law*, Oxford, Oxford University Press, 2020, 658; G. Pesce, *Funzione amministrativa, intelligenza artificiale e blockchain*, 139 and 140.

⁴² In this sense, in the Italian legal system, the Council of State stated that the technical rule that governs the algorithm is a general administrative rule, created by man and not by machine, and for this reason it is subject to the general principles of administrative activity, such as those of publicity, transparency, reasonableness and proportionality, and is in any case subject to review by the administrative judge, who must assess the correctness of the automated process in all its elements (decision No. 2270/2019). In this sense G. Pesce, *Funzione amministrativa, intelligenza artificiale e blockchain*, 11. The Author also adds that in the mentioned decision the judge “recognized the importance of the digitization of the Public Administration for the improvement of the quality of the services provided to citizens and users, the full compliance of the algorithm with the canons of efficiency and economy of the administrative action and the good performance of the public administration, the benefits, in carrying out repetitive and non-discretionary activities, which are obtained by excluding interference due to negligence (or worse intent) of the official (human being) with a consequent greater guarantee of impartiality” (unofficial translation).

⁴³ Studies show that citizens' trust and reliance on AI are quite poor. In this sense, among others, Oxford Commission on AI & Good Governance, *AI in the Public Service: From Principles to Practice*, 2021, 6.

⁴⁴ B. Barraud, *L'algorithmisation de l'administration*, in *Revue Lamy Droit de l'immatériel*, 2018, 42, especially para. 20, in which the Author also reports that in 2016 for the first time an administration made public the source code of one of its algorithms (in particular it was an algorithm in the field of tax calculation), giving way to the publication of other public administration source codes.

⁴⁵ On AI and the principle of transparency: A. Simoncini, *L'algoritmo incostituzionale: intelligenza artificiale e il futuro delle libertà*, in *Biolaw Journal*, vol. 1, 2019, 63, especially 77; S. Crisci, *Evoluzione tecnologica e trasparenza nei procedimenti “algoritmici”*, in *Diritto di Internet*, n. 2, 2019, 377; S. Sassi, *Gli algoritmi nelle decisioni pubbliche tra trasparenza e responsabilità*, in *Analisi giuridica dell'economia*, vol. 1, 2019, 106; A.G. Orofino, *L'attuazione del principio di trasparenza nello svolgimento dell'amministrazione elettronica*, in *Judicium*, 2020.

not always necessary for algorithms to be made public. In fact, when algorithms are particularly complex, a non-expert public would still not be able to understand them, with the consequence that their mere publication may not be of help for transparency purposes. In such cases of opacity it is essential to be able to explain the algorithms, describing the purpose for which they are used, the decisive variables of the result produced, the type of data used and their quality, as well as the decision-making rules adopted⁴⁶.

In order to ensure a sufficient level of transparency, adequate legislation and initiatives are needed. For example, in France in 2016 the *loi pour une République numérique* extended the range of data that public administrations must communicate⁴⁷. The law now considers the source codes of government softwares as administrative documents and communicable under the same conditions as these. It also recognizes an individual's right to be informed when an administration uses an algorithm to take an individual decision. In particular, the citizen must be provided with appropriate information about the purpose of using the algorithm, the degree and methods of contribution of the algorithmic processing to the decision-making process, the data processed and their sources, the processing parameters and, possibly, their weighting and the operations carried out⁴⁸. The

administration is also obliged to communicate in an intelligible form the rules relating to data processing and the main characteristics of its action.

In Spain and in the United Kingdom, in order to increase transparency and publicity, administration is recommended to adopt a catalog of all IT applications that can have an impact on citizens, including those that have an impact on the provision of public service⁴⁹. Similarly, in Canada, the government requires public sector organizations to publish the results of their *Algorithmic Impact Assessment* and to make citizens aware of decisions that may impact them⁵⁰.

In its *Ethics Guidelines for Trustworthy AI* (2019), the European Commission dictates a series of ethical principles and imperatives, including that of explainability, the lack of compliance with which would prevent the possibility of challenging the decisions adopted on the basis of algorithms. In particular, the Commission requires that decision-making processes are transparent, that the capabilities and the purpose of AI systems are communicated openly and that final decisions are explainable to stakeholders, as far as possible. Similarly, the contemporary OECD document, *Principles on Artificial Intelligence*, sets five principles to be respected when using AI, and these include transparency and responsible disclosure regarding AI systems in order to ensure that people understand AI-based results and can challenge them⁵¹. In line with this document, the Brazilian Strategy for AI adopted in 2021 is based on five principles aimed at ensuring responsible management of AI systems and these include transparency and

⁴⁶ Among others, N. Bublitz Camara, *O uso da inteligência artificial no processo administrativo como ferramenta para auxiliar na efetividade dos direitos humanos*, in *Revista Brasileira de Direito Social*, vol. 4, n. 1, 2021, 16. See also Council of Europe, *Ad Hoc Committee on Artificial Intelligence (CAHAI), Policy Development Group, CAHAI-PDG(2021)03*, 4 and 17. Sometimes, however, the functioning of the algorithm is deliberately not made public for various reasons: to prevent the system from being circumvented making the algorithm ineffective, to protect the rights of the developers and programmers of the algorithm who have an interest in not disclosing the source code algorithms (and which for this reason are used to introduce confidentiality clauses in contracts in this regard) or because of the complexity of the algorithms which can be extremely dynamic and therefore by nature not able to be reproduced. On AI and transparency also: D.U. Galetta, *La Pubblica Amministrazione nell'era delle ICT: sportello digitale unico e Intelligenza Artificiale al servizio della trasparenza e dei cittadini?*, in *Cyberspazio e Diritto*, vol. 3, 2018, 319.

⁴⁷ *Loi pour une République numérique*, 7 October 2016, amending art. L. 300-2 of the Code des relations entre le public et l'administration.

⁴⁸ Art- R. 311-3-1-2 of the Code des relations entre le

public et l'administration (deriving from the Decree No. 2017-330, 14 March 2017). Limits to the transmission of the aforementioned information by the administration to citizens are security and secrets protected by law.

⁴⁹ O. Capdeferro Villagrasa, *La inteligencia artificial del sector público: desarrollo y regulación de la actuación administrativa inteligente en la cuarta revolución industrial*, 6. Similarly, in Amsterdam and Helsinki AI Registries for transparency purposes are a good example of initiatives aimed at explicitly communicating and explaining where AI is used and how automated decisions are taken, clearly describing any or potential opacity.

⁵⁰ In this sense J. Berryhill, K.K. Heang, R. Clogher and K. McBride, *Hello, World: Artificial Intelligence*, 110.

⁵¹ OECD Council, *Recommendation on Artificial Intelligence (AI)*, 22 May 2019, which is the first intergovernmental standard on AI.

explainability⁵².

Also the Italian Council of State recently expressed its opinion on the need to ensure compliance with the principle of transparency in the use of algorithms by administration⁵³. In particular, this judge stated that a reinforced declination of the aforementioned principle requires that the algorithm, through which the robotic decision is made, must be “recognizable”, so as to be able to verify the compliance of the results of the robotic procedure with the prescriptions and purposes of law or of administration and in such a way that the methods and rules underlying the algorithm are clear (and therefore can be questioned). The knowability of the algorithm must be guaranteed in all aspects: from its

authors to the procedure used for its elaboration, to the decision mechanism, including the priorities assigned in the evaluation and decision-making procedure and the data selected as relevant.

Compliance with the principle of transparency, and with the related obligation of motivation underlying it, encounters significant critical issues when the use of AI produces the so-called black box effect⁵⁴. In such cases, both the reasoning and the decision take place in a “black box”, with the consequence that the machine learning⁵⁵ algorithm leads to a result without, however, that neither programmers nor officials are able to explain how it got there. These are complex algorithms, which are modified through updates or self-learning, that can lead to a change in the functioning of the program, without it being possible to determine how much and in which elements⁵⁶. The provision of the source code or of the text written in

⁵² N. Bublitz Camara, *O uso da inteligência artificial no processo administrativo como ferramenta para auxiliar na efetividade dos direitos humanos*, 13. In an analogous sense, Etalab, the Task Force under the French Prime Minister’s Office in charge of open data and open government, in 2019 published a guide for public administrations on the responsible use of algorithms in the public sector, *Guidance on Accountability for Public Algorithms*, which proposes the following six principles aimed at ensuring the reliability of AI in the public sector: (i) acknowledgment, i.e. the obligation to inform interested parties when using an algorithm; (ii) general explanation, on the functioning of an algorithm; (iii) individual explanation, personalized of a specific result or decision; (iv) justification on why an algorithm is used and on the reasons for choosing a particular algorithm; (v) publication of the source code and the necessary documentation, informing the interested parties about the possible elaboration of the algorithm by third parties; (vi) allow for contestation, in order to discuss and appeal against algorithmic decisions. See: www.etalab.gouv.fr/datasciences-et-intelligence-artificielle e www.etalab.gouv.fr/how-etalab-is-working-towards-public-sector-algorithms-accountability-aworking-paper-for-rightscon-2019.

⁵³ Italian Council of State, decision 8 April 2019, No. 2270, which also states that the algorithmic rule must be not only knowable in itself, but also subject to the full knowledge and full review of the administrative judge, and that, by virtue of the principle of transparency, the right to check the regularity of the procedure must be recognized, also for the purpose of filing a possible appeal. See on this decision, *ex multis*, I. Masi, *L’intelligenza artificiale al servizio della pubblica amministrazione 2.0*; E. Prosperetti, *Obbligo di motivazione e procedimenti in cui non è nata a priori la logica dell’algoritmo*, Note to the decision of the Council of State, section VI, 8 April 2019, n. 2270, in www.dirittomercatotechnologia.it, 2019; D.U. Galetta, *Algoritmi, procedimento amministrativo e garanzie: brevi riflessioni, anche alla luce degli ultimi arresti giurisprudenziali in materia*, para. 5; G. Marchianò, *Intelligenza artificiale: IA specifiche e l’amministrazione provvedimentale – IA generali e i servizi pubblici*, 154; V. Neri, *Diritto amministrativo e intelligenza artificiale: un amore possibile*, in *Urbanistica e Appalti*, n. 5, 2021, 581.

⁵⁴ On the black box effect, *ex multis*, F. Pasquale, *The Black Box Society: The Secret Algorithms That Control Money And Information*, London, Harvard University Press, 2015; C. Coglianese and D. Lehr, *Regulating by Robot: Administrative Decision Making in the Machine-Learning Era*, in *The Georgetown Law Journal*, vol. 105, n. 5, 2017, 1147; Y. Bathaee, *The Artificial Intelligence Black Box and the failure of intent and causation*, in *Harvard Journal of Law & Technology*, vol. 31, n. 2, 2018, 890; D. Card, *The “black box” metaphor in machine learning*, in <https://towardsdatascience.com>, 2019; O. Capdeferro Villagrasa, *La inteligencia artificial del sector público: desarrollo y regulación de la actuación administrativa inteligente en la cuarta revolución industrial*, 9.

⁵⁵ Machine learning, a branch of AI, consists - as the term itself indicates - in automatic learning. So called in 1959 by Arthur Lee Samuel, machine learning is aimed at making computers capable of learning on their own, without being programmed. The algorithms must be fed with a large amount of data and allow the machines to improve their results more and more based on experience. See D. Desordi and C. Della Bona, *A inteligência artificial e a eficiência na administração pública*, 11. On *machine learning*, *ex multis*, V.J. Barrat, *Our Final Invention: Artificial Intelligence and the End of the Human Era*, New York, Thomas Dunne Books, 2013, 92.

⁵⁶ In this regard G. Pesce, *Funzione amministrativa, intelligenza artificiale e blockchain*, 134, in which it is pointed out that “affirming that AI can assume the nature of a ‘black box’ does not imply, however, a total impenetrability of the algorithm to an accurate examination of the human being. Rather, it means that the method used for predictions by self-learning algorithms cannot be interpreted according to ordinary statistical intuitions. is different to say that no one is able to know how the algorithms arrive at a certain prediction. If this were not the case, after all, the p.a. could not make use of it because in contrast with the principle of transparency that must necessarily characterize its action” (unofficial translation).

non-programming computer language appears to be an unsatisfactory solution since it is not only illegible even by experts, but ends up revealing only partially the dynamics of the decision. Scarcely predictable and vulnerable to cyber security threats, these technologies therefore make it difficult or almost impossible to explain the reasons for the decision adopted, in contrast to the procedural principles and guarantees provided for by law, which require, inter alia, that public administration justifies its acts and explain its decisions, especially when the legal system allows a certain margin of discretion⁵⁷. In such cases, given the impossibility or in any case the high difficulty of providing an explanation of the algorithms and their operation, it appears necessary to ensure a clear definition of responsibilities. In fact, the principle of accountability, which is “the core of modern democratic systems”⁵⁸, is indissolubly linked to the principle of transparency, particularly in public activities. Those who exercise public functions must be accountable before citizens for their actions (or omissions), otherwise democracy will be emptied.

In addition, to remedy the black box effect, within the European Union art. 22 of the General Data Protection Regulation No. 2016/679 (GDPR)⁵⁹ states that “the data subject shall have the right not to be subject to a decision based *solely* on automated processing (...) which produces legal effects concerning him or her or similarly significantly affects him or her”. However, by establishing a derogation regime, the same article provides that the foregoing does not apply as regards processings that are necessary for the execution of a task carried

out in the public interest or in the exercise of official authority vested in the controller. Pursuant to the following art. 23, the right not to be subject to a decision based solely on automated processing can be limited to only two conditions. First of all, the principle of legality must be respected, *i.e.* the automated processing must be provided for by EU law or national law. Secondly, the principle of proportionality must be respected. More specifically, the limitation must constitute a necessary and proportionate measure in a democratic society to safeguard a long series of specifically listed public interests, such as national security, defense and public security⁶⁰. In any case, since it is essential that public administration is able to provide adequate reasons for its decisions, automated processing, even when admissible, must be “subject to suitable safeguards, which should include specific information to the data subject and the right to obtain human intervention, to express his or her point of view, to obtain an explanation of the decision reached after such assessment and to challenge the decision”⁶¹. In other words,

⁶⁰ In particular, the public interests listed in the GDPR, art. 23, para. 1, are: *a)* national security; *b)* defence; *c)* public security; *d)* the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, including the safeguarding against and the prevention of threats to public security; *e)* other important objectives of general public interest of the Union or of a Member State, in particular an important economic or financial interest of the Union or of a Member State, including monetary, budgetary and taxation matters, public health and social security; *f)* the protection of judicial independence and judicial proceedings; *g)* the prevention, investigation, detection and prosecution of breaches of ethics for regulated professions; *h)* a monitoring, inspection or regulatory function connected, even occasionally, to the exercise of official authority in the cases referred to in points (a) to (e) and (g); *i)* the protection of the data subject or the rights and freedoms of others; *j)* the enforcement of civil law claims.

⁶¹ Recital 71 of GDPR. With regard to articles 22 and 23 of the GDPR, and to the aforementioned recital: I. Masi, *L'intelligenza artificiale al servizio della pubblica amministrazione 2.0*, 10; S. Civitarese Matteucci, “Umano troppo umano”. *Decisioni amministrative automatizzate e principio di legalità*, in *Diritto pubblico*, n. 1, 2019, 23; D.U. Galetta and J.G. Corvalán, *Intelligenza Artificiale per una Pubblica Amministrazione 4.0? Potenzialità, rischi e sfide della rivoluzione tecnologica in atto*, 17; A. Boix Palop, *Los algoritmos son reglamentados: la necesidad de extender las garantías propias de las normas reglamentarias a los programas empleados por la administración para la adopción de decisiones*, in *Teoría y Método, Revista de Derecho Público*, vol. 1, 2020, 223; G. Pesce, *Il Consiglio di Stato ed il vizio della opacità*

⁵⁷ Council of Europe, Ad Hoc Committee on Artificial Intelligence (CAHAI), *Policy Development Group, CAHAI-PDG(2021)03*, 18; and European Commission, Directorate-General for Justice and Consumers, *Liability for artificial intelligence and other emerging digital technologies*, Publications Office, 2019.

⁵⁸ M. Bovens, *The concept of public accountability*, in E. Ferlie, L. Lynne and C. Pollitt (eds.), *The Oxford Handbook of Public Management*, Oxford, Oxford University Press, 2007, 182. On the issue of liability and harmful action from AI: G. Marchianò, *Intelligenza artificiale: IA specifiche e l'amministrazione provvedimentale – IA generali e i servizi pubblici*, 159.

⁵⁹ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

when it comes to public activity, the principle of transparency and the related accountability principle cannot be entirely sacrificed by completely replacing human activity with that of AI.

Having said all this, solutions must be found that are able to guarantee the reliability and legitimacy of the use of new technologies in the public sector, while ensuring that citizens have confidence in them. To this end, the adoption of suitable monitoring and audit mechanisms of the AI systems has been hypothesized. Furthermore, the establishment of a global, multi-sector and independent certification authority or agency with the task of validating *ex ante* and continuously checking the various applications of new technologies to public services, on the basis of security standards and global quality indicators, still missing today, has been urged. This measure would allow to correct any wrong algorithmic logic and the weight attributed to individual variables, also helping to build a long-lasting relationship of trust between public service providers and users⁶². Also, the establishment of an independent global arbitration authority that quickly and effectively assesses and resolves disputes between the subjects involved in public service AI systems (*i.e.* developers, regulators and users)⁶³ has been proposed. This body

dell'algoritmo tra diritto interno e diritto sovranazionale, in *Giustamm.it*, 2020, 9; A. Sola, *L'automatizzazione dell'azione amministrativa*, 10; D.U. Galetta, *Algoritmi, procedimento amministrativo e garanzie: brevi riflessioni, anche alla luce degli ultimi arresti giurisprudenziali in materia*, para. 4. In the same sense, the mentioned European Parliament Regulation of 21 April 2021 provides for an obligation of transparency and explanation of AI applications and for the necessary human intervention, as well as the adoption of measures such as independent audits to ensure compliance.

⁶² Oxford Commission on AI & Good Governance, *AI in the Public Service: From Principles to Practice*, 2021, 12. See also R. Cavallo Perin and I. Alberti, *Atti e procedimenti amministrativi digitali*, in R. Cavallo Perin and D.U. Galetta (ed.), *Il diritto dell'Amministrazione pubblica digitale*, Turin, Giappichelli, 2020, 146; V. Herold, *Demokratische Legitimation automatisiert erlassener Verwaltungsakte*, Berlin, Duncker & Humblot GmbH, 2020, 239.

⁶³ Oxford Commission on AI & Good Governance, *AI in the Public Service: From Principles to Practice*, 2021, 9. In particular, this study believes that the independent arbitration authority should be approached, in a complementary way, by an international scientific body, also independent, which provides impartial evaluations to the former. The independent arbitration authority in turn would signal to the scientific body the need to carry out research on the issues and problems

would be particularly appropriate given the fast pace of innovation, which does not allow to fully predict how the new AI tools will be used in the public sphere⁶⁴.

4. *AI and the principles of public services*

Public services are governed by a series of “historical” principles and characteristics, identified by legislation, case law and sector authorities. In particular, the following characterize the provision of public services: the dutifulness, according to which public authorities are responsible for ensuring that the service is provided; equality and equal treatment, according to which users all have equal right of access to the service and to receive qualitatively equal services, for the same need; non-discrimination, according to which the service must be guaranteed to all without distinction of income, location, social class and individual conditions; universality, according to which the service must be made available to all end users at a set quality level and at an affordable price (affordability), regardless of the geographical location⁶⁵.

The use of AI in public administration and in particular in public services, oriented

relating to the disputes raised before it. More specifically, the scientific body, to be designed on the model of the Intergovernmental Panel on Climate Change (IPCC), should carry out research on algorithmic audits, economic impacts, practical use cases and best policy practices, as well as disseminate the results of such research in order to inspire and coordinate the use of new AI systems to solve problems that require collective action.

⁶⁴ There are those who have hypothesized the institution of a specific regulatory authority in relation to AI in the public sector. This is the case, for example, of the Report of the English Committee on Standards in Public Life, *Artificial Intelligence and Public Standards*, 2020. However, after speculating on the institution of such an authority, the Committee suggests that the Center for Data Ethics and Innovation (CDEI) be given an independent legal basis to act as a central regulatory body, advising regulators and the government on how to address emerging AI issues in their respective fields (recommendation 4). This proposal would in fact allow the aforementioned regulatory authorities to continue to use their specific experience in the sector, also having an expert regulatory body focused only on AI. For this to work effectively, it is important that the regulatory guarantee body has sufficiently broad competences and powers.

⁶⁵ These are elements that are found, for example, at the basis of the notion of “service of general interest” (SGI) expressed in the Commission’s Green Paper of 21 May 2003 on services of general interest, COM (2003) 270, and, indeed, founded on the principles of continuity, universality, accessibility of tariffs and of protection of consumers - users. On public services, see the first note of the second paragraph.

towards efficiency and a culture of results, can lead to interesting benefits and positive effects in relation to the aforementioned principles. For example, the satisfaction of the need for universality appears to be favored by the ability of algorithms to contrast the territorial and social divide within States and to break the isolation of certain populations, managing to provide them with public services more effectively, faster and in a more personalized way⁶⁶. Furthermore, while the management of services by humans can generate more or less conscious and voluntary discrimination, AI, by allowing services to be customized and consequently to treat different situations in a different way, is able to allow greater implementation of the principle of substantive equality⁶⁷.

At the same time, the use of new technologies for the purpose of providing public services may instead raise significant problems in relation to their compliance with the aforementioned principles. For example, given that algorithmic processing allows to customize the public service and to better adapt administrative decisions to the specificities of each case, care must be taken to ensure that the principles of equality and universality are not in danger⁶⁸. It is no small matter. In fact, although today AI, as seen, is a powerful tool capable of helping to improve the efficiency of public administration and

public services, its use in this area cannot however result in a violation of the principles that govern them.

There are many factors related to new technologies that can negatively affect the provision of public services and compliance with the principles relating to them.

For example, an unevenly widespread connection on the territory risks generating inequalities and a consequent “digital fracture” between the well-connected fringes of the population and those that are poorly connected or not at all. On the contrary, the application of new technologies to public services, especially digital ones, must instead be accompanied by a (good) connection spread evenly. To this end, it is necessary to ensure not only an adequate legal framework but also suitable infrastructures⁶⁹.

Furthermore, negative effects on the provision of public services can be produced in the case of databases of “poor quality”, *i.e.* characterized by discriminatory bias, such as those relating to sex or gender stereotypes. This is the case, for example, of databases in which some groups are under or over-represented, with the result that their presence is set aside or exaggeratedly emphasized. In these cases, an unrefined and uncritical use of historical or contemporary data, especially when it comes to machine learning systems, can give rise to or can perpetuate discrimination⁷⁰. The bias in databases could in fact unintentionally be reflected in the services provided, which would therefore violate the principles of equality and non-discrimination. In order to prevent this, it appears necessary to ensure that human can intervene to change any contested decision and, in general, that the public administration checks the results produced by algorithmic systems in order to repair any illegitimate discrimination. This is obviously a delicate operation, that requires considerable means and resources which the administration is often unable to employ⁷¹, but that is

⁶⁶ In this sense B. Barraud, *L'algorithmisation de l'administration*, para. 8, in which it is noted, for example, that the Council of State (in the document *Puissance publique et plateformes numériques: accompagner l'ubérisation*”, *La documentation française*, 2017), underlining how IT platforms are an opportunity to develop new public service activities, proposes that the General Commissioner for the Equality of Territories define a methodology aimed at taking into consideration the new possibilities offered by the aforementioned platforms in conceiving and implement policies to combat territorial inequalities and incentives for the development of territorial capacities.

⁶⁷ On AI and the principle of equality: A. Simoncini and S. Suweis, *Il cambio di paradigma nell'intelligenza artificiale e il suo impatto sul diritto costituzionale*, in *Rivista di filosofia del diritto*, vol. 1, 2019, 87; G. Resta, *Governare l'innovazione tecnologica: decisioni algoritmiche, diritti digitali e principio di uguaglianza*, in *Politica del diritto*, n. 2, 2019, 199; A. Celotto, *Come regolare gli algoritmi. Il difficile bilanciamento fra scienza, etica e diritto*, in *Analisi giuridica dell'economia*, issue 1, 2019, 47; P. Zuddas, *Intelligenza artificiale e discriminazioni*, in *Liber amicorum per Pasquale Costanzo*, 2020, in www.giurcost.org.

⁶⁸ On these issues B. Barraud, *L'algorithmisation de l'administration*, para. 24.

⁶⁹ G. Pesce, *Digital First*, 138.

⁷⁰ Council of Europe, Ad Hoc Committee on Artificial Intelligence (CAHAI), Policy Development Group, *CAHAI-PDG(2021)03*, 13.

⁷¹ B. Barraud, *L'algorithmisation de l'administration*, para. 17. The Author also draws attention to the fact that if on the one hand citizens contribute to building new public services with their data by transmitting information on their movements, their health, and their family and professional life, on the other hand such data must be protected against unwanted or not accepted

nevertheless necessary⁷².

The aforementioned critical issues are of concern, as highlighted by several voices. For example, in the United Kingdom the Committee on Standards in Public Life expresses concern that the prevalence of data bias constitutes a threat to another principle that must govern public life, namely objectivity. To avoid the spread of discrimination in the public sector, in a recent report, the Committee requests that the application of anti-discrimination legislation to AI be clarified⁷³. Furthermore, in Brazil a resolution of the Conselho Nacional de Justiça of 2020 underlines the importance of compatibility between fundamental rights and the development of AI and deems necessary to observe principles including equality and non-discrimination⁷⁴.

In consideration of the foregoing, the many declarations, guidelines and codes of ethics drawn up by world experts from the world's leading institutions and that propose measures to regulate the use of AI in the public sector in order to ensure compliance with the

reuse. For this reason, the algorithmic State must necessarily be held back by the right to protect personal data and the right to respect for private life (para. 16).

⁷² F. Molinari, C. van Noordt, L. Vaccari, F. Pignatelli and L. Tangi, *AI Watch. Beyond pilots: sustainable implementation of AI in public services*, EUR 30868 EN, Publications Office of the European Union, Luxembourg, 2021, especially 36. In this regard, it should be considered that the validity of the activities carried out by the AI systems directly depends on the quality of the data on which they are based.

⁷³ Committee on Standards in Public Life, *Report on artificial intelligence and its impact on public standards, 2020*, in www.gov.uk, in which a series of recommendations are proposed in order to better manage data bias in public services and to provide fair public services: (i) the Equality and Human Rights Commission should develop guidance in partnership with the Alan Turing Institute and the Centre for Data Ethics and Innovation (CDEI) on how public bodies should best comply with the Equality Act 2010 (Recommendation 3); (ii) ensuring diversity within AI teams who are designing or developing products; (iii) public and private providers of public services should consciously tackle issues of bias and discrimination (Recommendation 10).

⁷⁴ Conselho Nacional de Justiça, Resolução nº 332/2020 on the use of AI in the judicial power. In particular, this resolution deems it necessary to respect the principles of transparency, predictability, verifiability, impartiality, substantial justice, equality, non-discrimination, plurality, solidarity and justice and guarantees respect for fundamental rights in the development and use of AI. For example, to avoid discriminatory prejudices, the AI system, before being put into action, must be approved by human to identify any prejudices and generalizations.

mentioned principles can be positively welcomed⁷⁵.

5. The collaborative transformation in public services: tools, standards and simplification

In carrying out relations between levels of government and above all relations between public powers and private subjects, there are many mechanisms which, thanks to the use of AI, can and must facilitate a process of collaborative transformation in the field of public services, avoiding a mere reproduction of a bureaucratic relationship in various more opaque and therefore less democratic forms.

Not unlike what already happens in the private sector, specific algorithmic tools can allow for example, after users have assessed the quality of the individual services received, to mediate between these evaluative judgments and propose, even in real time, the necessary or appropriate measures to improve the services provided. In other words, giving rise to a continuous improvement in the understanding of users' needs, these algorithmic systems implement a collaborative transformation of an improving type of the public services provided. This is an important effect, especially in the public sector, in particular considering that one of the knots that binds and entangles the administrative activity is the difficulty of making decisions that are able to satisfy the various subjects involved, public and private.

Likewise, in the sense of a collaborative transformation in public services, quality standards, *i.e.* the minimum levels of quality that must be ensured to users by service providers, also cooperate. In particular, by forcing to review many of the existing standards and to improve the quality of the data and software used, AI allows the quality of services to be adapted to the new needs of citizens-users, transforming these services for

⁷⁵ For example see: N. Bublitz Camara, *O uso da inteligência artificial no processo administrativo*, 10, which mentions a manifesto of 2018 aimed at preventing AI advances from violating human rights; J. Berryhill, K.K. Heang, R. Clogher and K. McBride, *Hello, World: Artificial Intelligence*, 113, where, based on the awareness that if it is not possible to temper an AI bias it is difficult to justify its use in the public sector, to mitigate and monitor cognitive biases in algorithms, especially in the case of decisions made with deep learning black box system, it is proposed to create governance frameworks at the design stage that include a means of monitoring outcomes.

the better. This mechanism therefore appears to be able to bridge the large gap existing between the quality standards envisaged in the public sector and usually contained in the Service Charters and related documents, on the one hand, and the much higher quality standards adopted instead in the private sector, on the other. The foregoing is particularly relevant since, given that any algorithmic decision taken in the public sector should be subject to higher standards than those of the private sector as many citizens have no alternative to using the first, the objective of guaranteeing a certain level of quality of the services offered through the use of AI is relevant not only for the welfare of citizens but also for the purposes of democracy, since these are services affecting the exercise of other rights.

Still in relation to standards, in the current framework these can have a significant impact in mitigating the challenges and maximizing the opportunities that AI offers when applied in the public sector for another reason as well. In particular, compliance with harmonized standards, for example within the European Union, but preferably globally, can generate a presumption of legitimacy of AI applications and services, producing, on the one hand, a high level of confidence in their compliance with the provisions of the legislation and, on the other hand, strong incentives to comply with the standards themselves. This is important not only when public service is provided by a public administration, but also, and even more so, when it is provided by a private subject. The provision of public services through the use of AI by private entities therefore poses significant challenges to support a certain level of standards, above all of quality and transparency.

Having clarified that there may be advantages deriving from a certain level of standardization in public services, however, establishing standards in relation to AI in such services presents a certain complexity, both on an institutional and a structural level. This operation must in fact be carried out within an appropriate legal framework, using adequate resources and must be assisted by effective systems to resolve any disputes. In fact, the aforementioned confidence in the application of AI to the public sector in general, and to public services in particular, appears to be closely linked to the development of effective

and solid standards, inconceivable, for example, in the absence of a suitable legal framework. The absence of this framework can in fact leave room for technical standards capable of facilitating prejudices and inequalities that are not corrected by any public intervention and therefore capable of exerting a negative impact on public life.

The application of AI to public services can produce a simplification of procedures capable of transforming the aforementioned services, their quality and the relationship between service manager and user in a collaborative sense. In fact, simplifying involves systematically reducing and eliminating unnecessary intermediate steps and intermediaries. Through this process of “disintermediation”, the service manager and the end user get closer and closer, being able to establish a more collaborative relationship. Furthermore, by combining the technological innovation process of public administration with an overall simplification in a collaborative sense of both the regulatory and procedural context, the further positive effect of reducing bureaucratic burdens and constraints, which on the one hand undermine the relationship of trust between public administration and citizens and, on the other hand, slow down the realization and productivity of public investments, is produced.

In terms of simplification it is important to mention the so-called principle “once only”, according to which the citizen must be able to provide his or her information to public administration only once, and the latter, consequently, must not ask the citizen for documents it already possesses, allowing both public administration itself and the citizen to save time and money⁷⁶. To this end, it is

⁷⁶ The “once only” originates from EU Regulation on the single digital gateway, aimed at simplifying and improving the effectiveness of interactions with public administrations of different Member States for citizens and businesses, also avoiding duplication (total or partial) for the same information: Regulation (EU) 2018/1724 of the European Parliament and of the Council of 2 October 2018 establishing a single digital gateway to provide access to information, to procedures and to assistance and problem-solving services and amending Regulation (EU) No 1024/2012 and, in particular, recitals 12 ff., 40, 55, 63, 72, and art. 14, para. 2. See: D.U. Galetta, *Transizione digitale e diritto ad una buona amministrazione: fra prospettive aperte per le Pubbliche Amministrazioni dal PNRR e problemi ancora da affrontare*, in *Federalismi.it*, n. 7, 2022, para. 5.

necessary to create effective interoperability between the databases of the various entities, that is, to ensure that they establish a constant dialogue with each other, which until now was usually not very successful⁷⁷. The simplification process described must be carried out consistently at all levels of government, creating digital tools that act as a unitary communication channel between citizens and public administrations, thereby increasing the efficiency and quality of public services⁷⁸. In particular, it is necessary to develop a system of enabling platforms that make it possible to achieve the objective of once-only communication by ensuring extraordinary bureaucratic simplification and an open and transparent dialogue between citizens and entrepreneurs on the one side and public administration on the other.

The simplification of access to digital services of public administration also converges towards the aim of improving the relationship between public administration and citizens-users in a collaborative sense, and consequently of improving the quality and efficiency of the services provided. In particular, this is facilitated by extending the possibility for citizens to use services through their digital identity, also in relation to services provided by public service concessionaires and publicly controlled companies⁷⁹.

6. Concluding considerations

The use of AI in the public sector is an expanding reality⁸⁰ and a need at a global

⁷⁷ This is the case, for example, of Italy, where, according to the survey “*Digitalizzazione e interoperabilità delle banche dati fiscali*” (“*Digitization and interoperability of tax databases*”), approved by the Parliamentary Supervisory Commission On The Tax Registry, 2022, the “once only” principle was at the time largely disregarded, despite repeated attempts by the legislator to impose its application.

⁷⁸ Report of the V Budget Commission of the Italian Chamber of Deputies on the identification of priorities in the use of the Recovery Fund (Doc. XVI, no. 4), 12 October 2020, 24, containing the addresses relating to the “*Digitization of the PA*”.

⁷⁹ The principle of digital first, which in the Italian legal system is governed by art. 1, para. 1, lett. b), Law 7 August 2015, No. 124, establishes that it is necessary “to redefine and simplify administrative procedures, in relation to the needs of speed, certainty of timing and transparency towards citizens and businesses, through a discipline based on their digitization and for the full realization of the principle ‘digital first’, as well as the organization and internal procedures of each administration” (unofficial translation).

⁸⁰ As regards Italy, for example, the mentioned

level now: it is capable of allowing the administration to provide public services of higher quality and improve their efficiency, helping to heal some of the “diseases” affecting public administration, public services and the public sector in general. In fact, new technologies allow automation and therefore the speeding up of routine government and administrative processes and decision-making, greater coordination and closer cooperation both between levels of government and between public and private subjects, as well as greater savings in resources. The use of AI therefore shows (also) in the public sector that it has great potential, made even more evident and crucial in emergency contexts such as the pandemic one, envisaging the establishment of a new normal.

Alongside undoubted benefits and considerable opportunities, in designing a new normality, the use of new technologies in the public sector however also presents certain risks and limitations, also evidenced by an implementation path that is not yet satisfactory⁸¹. In fact, it is necessary to consider the implications of AI on the principles that govern administrative activity and public services, as well as on the defense and promotion of fundamental rights and of the rights of the community with respect to institutions. These are risks that should not be underestimated. In fact, new technologies are capable of having an impact on society such as to jeopardize the democratic values and human rights on which it is founded. In this context, it is also necessary to keep in mind the difficulties related to the wide range of interests involved and that do not always converge, such as those of citizens, businesses, programmers and society as a whole.

The reflections proposed in this study regarding the algorithmization of public administration, and in particular the

European Commission Country Report of February 2020 recorded progress in increasing the efficiency and digitization of public administration, and in particular in the offer of digital public services for citizens and for businesses.

⁸¹ Oxford Commission on AI & Good Governance, *AI in the Public Service: From Principles to Practice*, 2021, 2, in which it is highlighted that, despite the many projects in which the use of AI is foreseen, it often struggles to find a complete and satisfactory implementation, often producing disappointing and worrying results.

introduction of AI in public services, are certainly only a starting point. The phenomenon object of this investigation is destined to fuel new debates and conflicts, both in doctrine and in jurisprudence, aimed at determining to what extent this phenomenon can spread and is acceptable. The present and future investigation aimed at answering this question takes complex forms that are in part certainly not known and unforeseeable. On the other hand, the relative boundaries are clear and cannot be crossed and sacrificed. These include the aforementioned major principles governing public services. Although a rethinking of classical schemes is necessary to a certain extent, the transformation and innovation process currently underway and destined to persist cannot in fact ignore the aforementioned principles and the pursuit of public interest goals. These principles are essential reference parameters also in the new normal that is forming so that the system of guarantees on which administrative law and today's democratic systems are based remains intact. Precisely for this reason it appears essential to look for tools in administrative law that can allow new technologies to result in more efficient public services, at the same time reconciling the use of them with the values of the legal system and safeguarding people's rights and guarantees.