



The transition towards a model of administrative decision based on algorithms

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Abstract: Il ricorso all'intelligenza artificiale e la promozione degli investimenti in tecnologie e infrastrutture digitali costituiscono fattori destinati a incidere in modo sempre più pervasivo sui modelli di decisione pubblica. Il costo della burocrazia e la lentezza dei processi decisionali consentono di concepire la digitalizzazione non solo come approntamento di strumenti informatici, ma come volano per la semplificazione e l'accelerazione amministrativa. L'analisi si concentra sulla costruzione delle decisioni basate su algoritmi dal punto di vista della loro gradualità e trasparenza. Gli approdi giurisprudenziali e normativi con l'affermazione dei principi di legalità algoritmica, per tale via, suggeriscono di riflettere sulla predeterminazione delle scelte e sulla ricerca dei parametri in base ai quali esercitare il controllo di legalità sostanziale.

The adoption of artificial intelligence, coupled with growing investment in digital technologies and infrastructure, is reshaping public decision-making in increasingly pervasive ways. The costs of bureaucracy and the delays inherent in administrative procedures have fostered an understanding of digitalisation not merely as the deployment of information technologies, but also as a means of promoting simplification and greater efficiency. The analysis focuses on the structuring of algorithmic decisions from the perspective of their progressive articulation and transparency. Recent judicial and legislative developments, marked by the emergence of the principles of algorithmic legality, offer an opportunity to reconsider both the ex ante structuring of discretionary power and the criteria for assessing the substantive legality of public action.

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1. Artificial Intelligence, algorithms and digitalisation: introductory remarks and analytical perspective

The use of Artificial Intelligence (AI), together with the promotion of investment in digital technologies and infrastructure, is expected to exert an increasingly significant influence on public decision-making processes. The potential benefits are considerable,



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not only in terms of efficiency and impartiality, but also in promoting inclusive and sustainable development in accordance with principles of good administration¹.

The costs associated with bureaucratic procedures and the delays that often characterise administrative decision-making call for a reassessment of digitalisation, not merely as the introduction of technological tools, but as a means of simplifying administrative procedures and enhancing the effectiveness of public action². Such an approach, founded upon the accuracy and reliability of data, as well as their consistency with the decisions generated on their basis³, has long been pursued in Countries such as China and the United States, and its implementation is expected to contribute to the broader modernisation of public administration.

Whereas China has adopted a highly centralised regulatory model based on pervasive and often intrusive state oversight, as evidenced by the *Provisions on the Administration of Deep Synthesis Internet Information Services* (2022) and the *Measures for the Management of Generative AI Services* (2023), the United States, where artificial intelligence originated and has undergone its most significant development, has largely relied on broad, programmatic principles, consistent with its longstanding reluctance to embrace rigid legislative intervention.

This approach is already reflected in the *Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence* (2023)⁴, which, while

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¹ Cf. D.U. GALETTA, *Digitalizzazione e diritto ad una buona amministrazione (il procedimento amministrativo, fra diritto UE e tecnologie ICT)*, in R. CAVALLO PERIN, D.U. GALETTA (eds.), *Il diritto dell'amministrazione pubblica digitale*, Giappichelli, Torino, 2020, p. 85. Contemporary scholarship increasingly refers to "Administration 4.0", a paradigm of public administration distinguished by a high level of automation and interconnectivity. See, for all, D.U. GALETTA, J. GUSTAVO CORVALÁN, *Intelligenza Artificiale per una Pubblica Amministrazione 4.0? Potenzialità, rischi e sfide della rivoluzione tecnologica in atto*, in *www.federalismi.it*, 3, 2019. L. PREVITI, *La decisione amministrativa robotica*, Editoriale Scientifica, Napoli, 2022, explores the emerging model of Public Administration 4.0 through the lens of algorithmic decision-making, as part of the broader evolution from the "information society" to the "algorithmic society".

² On the implications of the development of artificial intelligence for administrative law, both in the relationship between public authorities and private individuals and in the areas of administrative organisation, action and jurisdiction, see E. PICOZZA, *Politica, diritto amministrativo and Artificial Intelligence*, in *Giur. it.*, 7, 2019, p. 1761.

³ Cf. J.B. AUBY, *Il diritto amministrativo di fronte alle sfide digitali*, in *Ist. federalismo*, 3, 2019, p. 619; ivi I.M. DELGADO, *Automazione, intelligenza artificiale e pubblica amministrazione: vecchie categorie concettuali per nuovi problemi?*, p. 643; P. OTRANTO, *Decisione amministrativa e digitalizzazione della p.a.*, in *www.federalismi.it*, 2, 2018.

⁴ According to A.F. URICCHIO, *Intelligenza artificiale e gestione del territorio: la prospettiva del tributarista*, in R. BELLOTTI, S. TANGARO, A.F. URICCHIO (eds.), *Intelligenza artificiale e gestione dei territori: aspetti scientifici e tecnologici*, Cacucci, Bari, 2025, p. 4, this approach is by no means novel. As early as the 1990s, with the advent of the Internet, policymakers chose to entrust the market with the task of self-regulation, embracing the principle of Internet freedom and the corresponding absence of comprehensive regulatory intervention. The result was to confer an enormous degree of discretion upon



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maintaining a predominantly policy-oriented character, seeks to promote compliance with specific safety standards under the *Defense Production Act*. To this end, it provides for measures to combat deepfakes through the development by the Department of Commerce of guidelines on the labeling and watermarking of AI-generated content, as well as measures to safeguard privacy and protect workers. These initiatives are supported by the National Institute of Standards and Technology (NIST), which has been entrusted with developing evaluation protocols commonly referred to as *red teaming*.

A similar light-touch regulatory approach has been further reinforced by the *Promoting Advanced Artificial Intelligence Innovation and Security* (2026), which expressly seeks to strike a balance between deregulation and the economic growth of the technology sector, on the one hand, and the protection of national security against AI-enhanced cyberattacks, on the other. The effectiveness of this initiative will depend to a significant extent on its practical implementation by federal agencies and on the actual allocation of dedicated funding to support national defence programmes.

A different approach underlies Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 (AI Act), which is more firmly rooted in the European tradition of safeguarding fundamental rights. The Regulation seeks to enhance the proper functioning of the internal market by establishing a harmonised legal framework governing the development, placing on the market, putting into service, and use of artificial intelligence systems within the European Union.

This regulatory framework is designed to promote human-centric⁵ and trustworthy AI⁶, in accordance with the Union's founding values, while ensuring the free cross-border movement of goods and services. At the same time, it precludes Member States from

large digital platforms, a development that also reflected a deep-seated scepticism towards statutory regulation within the common law tradition. The Author identifies the emergence of two paradigms which, although grounded in different premises, ultimately give rise to equally problematic consequences for the protection of both individual and collective rights. On the one hand, there is unrestrained market-driven governance, which leaves the regulation of strategically important sectors to economic forces; on the other, there is pervasive state control, which risks evolving into a regulatory web capable of ensnaring the individual in an increasingly constraining grip.

⁵ On the centrality of the human being in the context of digital transformation, for all, G. GALLONE, *Riserva di umanità e funzioni amministrative. Indagine sui limiti dell'automazione decisionale tra procedimento e processo*, Cedam, Padova, 2023, p. 41 ff. In the Author's view, the so-called principle of the reservation of humanity does not preclude the use of machines or the digitalisation of activities traditionally performed by humans. It does, however, set an insurmountable limit on any form of digitalisation that becomes excessive, or even absolute, since adherence to the personalist principle, as a foundational value of the legal order, remains indispensable (p. 223).

⁶ As provided in Article 1(1) of Regulation (EU) 2024/1689, its purpose «is to improve the functioning of the internal market and promote the uptake of human-centric and trustworthy artificial intelligence (AI), while ensuring a high level of protection of health, safety, fundamental rights enshrined in the Charter, including democracy, the rule of law and environmental protection, against the harmful effects of AI systems in the Union and supporting innovation».



imposing restrictions on the development, marketing, or use of AI systems, except in the circumstances expressly provided for by the Regulation itself.

The AI Act lays down the conditions and requirements governing the use of artificial intelligence systems by both private actors and public authorities⁷. It is precisely in relation to the public sector that significant theoretical and practical issues arise, particularly with regard to the role to be attributed to the principle of legality in both the organisational structure and the exercise of administrative functions. These preliminary observations serve to define the scope of the present inquiry.

It should first be noted that digitalisation may today be understood not merely as the provision of IT tools, but rather as a means of simplifying and accelerating decision-making processes. The Next Generation EU programme and the National Recovery and Resilience Plans, for example, place particular emphasis on the digitalisation of bureaucratic processes, encompassing both administrative procedures and administrative justice⁸.

Furthermore, one of the key issues relates to the use of artificial intelligence, and in particular the application of algorithms, to expedite administrative decision-making and to render it more impartial, secure, and reliable (so-called automated decision-making).

⁷ More specifically, pursuant to Article 2(1) of the Regulation, the AI Act applies, irrespective of whether the relevant actors are public or private, to: (a) providers placing on the market or putting into service AI systems or placing on the market general-purpose AI models in the Union, irrespective of whether those providers are established or located within the Union or in a third country; (b) deployers of AI systems that have their place of establishment or are located within the Union; (c) providers and deployers of AI systems that have their place of establishment or are located in a third country, where the output produced by the AI system is used in the Union; (d) importers and distributors of AI systems; (e) product manufacturers placing on the market or putting into service an AI system together with their product and under their own name or trademark; (f) authorised representatives of providers, which are not established in the Union; (g) affected persons that are located in the Union. These provisions highlight a distinctive feature of the AI Act. Unlike traditional EU regulations, which are generally addressed exclusively to actors within the Member States, the AI Act also applies to certain entities established outside the European Union and, in specific circumstances, to AI systems used beyond the Union's territory. In adopting this approach, the EU legislature sought to prevent the circumvention of the AI Act through the interposition of non-EU entities in the marketing and distribution of artificial intelligence systems.

⁸ Which has made significant progress in the digitalisation of judicial proceedings. On this issue, G. ADAMO, *La redazione della sentenza nell'era del processo digitale*, in *Dir. e proc. amm.*, 3-4, 2019, p. 757; ivi, G. BOTTO, *Giustizia predittiva e sentenza in forma semplificata: alcuni spunti per una (razionale) applicazione dell'intelligenza artificiale nel processo amministrativo*, 2, 2023, p. 493; ivi V. FANTI, *Intelligenza artificiale e diritto amministrativo: prospettive, limiti, pericoli*, 4, 2022, p. 1001; ivi E. FOLLIERI, *La sentenza frutto dell'intelligenza artificiale*, p. 907; M. LUCIANI, *La decisione giudiziaria robotica*, in *Rivista AIC*, 3, 2018, p. 872; M.L. MADDALENA, *La digitalizzazione della vita dell'amministrazione e del processo*, in *Foro amm.*, 10, 2016, p. 2535; M. RAMAJOLI (ed.), *Una giustizia amministrativa digitale?*, Il Mulino, Bologna, 2023; A. SIMONCINI, *La dimensione costituzionale della giustizia predittiva: riflessioni sull'intelligenza artificiale e processo*, in *Riv. dir. proc.*, 2, 2024, p. 389.



The issue does not relate to the act in electronic form⁹, but to the act generated by electronic processing.

For clarity and to facilitate the understanding of the subsequent analysis, it is appropriate to clarify from the outset the relationship between algorithms and artificial intelligence¹⁰. An algorithm is a system of well-defined rules and computational procedures which, when applied in sequence, lead to the solution of a problem through a finite number of operations. At each step of the sequence, the next operation must be predetermined, and the outcome towards which the sequence converges must be concrete, real, and useful.

Among the simplest algorithms are deterministic ones, in which a given input corresponds to a single possible subsequent step in the sequence, so that only one final outcome can be reached by the machine, and probabilistic ones, in which a given instruction allows for different possible subsequent steps. This distinction also makes it possible to separate the program, understood as a computer language enabling the machine to use the algorithm to solve a class of problems.

In artificial intelligence systems, including those based on machine learning or deep learning, algorithms provide the models through which the data available to the computing system are processed, enabling it to reach a solution on the basis of patterns identified from past experiences and comparable situations. Accordingly, all AI systems necessarily rely on algorithms. However, for present purposes, it cannot be assumed that automated administrative decision-making necessarily involves the use of an artificial intelligence system.

The latter, pursuant to Article 3(1) of the Regulation (EU) 2024/1689, can be defined as «a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments»¹¹.

⁹ Cf. A. MASUCCI, *Atto amministrativo informatico*, in *Enc. dir.*, Agg., I, Milano, 1997, p. 221; A.G. OROFINO, *La patologia dell'atto amministrativo elettronico: sindacato giurisdizionale e strumenti di tutela*, in *Foro amm. CdS*, 9, 2002, p. 2257.

¹⁰ Cf., *amplius*, G. SARTOR, *L'informatica giuridica e le tecnologie dell'informazione. Corso d'informatica giuridica*, IV ed., Giappichelli, Torino, 2022, 79 ff.

¹¹ This definition builds upon and further develops that proposed by the European Commission in the *Coordinated Plan on Artificial Intelligence*, COM (2018) 795 final of 7 December 2018, according to which A.I. «refers to systems that display intelligent behaviour by analysing their environment and taking action, with some degree of autonomy, to achieve specific goals». It is contemporaneous with the report *A Definition of Artificial Intelligence: Main Capabilities and Scientific Disciplines*, published in April 2019 by the High-Level Expert Group on Artificial Intelligence (AI HLEG), an independent group established by the European Commission. This report precedes the subsequent *AI Watch. Defining Artificial Intelligence* (2020) issued by the Joint Research Centre (JRC) of the same EU Institution, which sets out an operational definition and a shared taxonomy of artificial intelligence, with the aim of supporting the development of the AI Act. Cf. S. SAMOILI, M. LOPEZ COBO, E. GOMEZ GUTIERREZ, G. DE PRATO, F.



Public administrations may employ artificial intelligence systems in a variety of functions¹², including regulatory activities, the provision of public services and the adoption of individual administrative decisions.

In this regard, it is worth noting that the use of AI systems does not, in itself, entail excessive costs¹³ and is, rather, aimed at achieving a more efficient allocation and use of public resources. The main costs are those related to digitisation, understood as the dematerialisation of documentation, and to organisational interoperability, together with the associated expenditure on staff training in the use of new technologies.

From this perspective, administrative organisation should be reconfigured to promote its modernisation through the effective use of the opportunities afforded by technological innovation. In particular, public administrations must be equipped with integrated, multidisciplinary expertise, all the more so in light of the so-called human-in-the-loop approach, which will be examined further below. Investing exclusively in information technology specialists is not sufficient and risks exacerbating existing territorial disparities in the digital transformation process.

The issue of the procurement of artificial intelligence systems that public administrations may use in the exercise of their functions is, from this perspective, far from secondary. While such systems may certainly be outsourced by drawing on the expertise of private actors engaged in AI research and development, an alternative capable of adequately addressing the organisational and regulatory requirements of public administrations is to develop them in-house.

In the United States, approximately half of federal agencies make use of artificial intelligence systems to conduct regulatory analysis and monitoring, as well as for enforcement tasks, the delivery of public services, organisational purposes, and adjudication functions, particularly in standardised procedures. What is particularly noteworthy, as has been observed¹⁴, is that in the United States agencies largely develop AI systems in-house. Where budgetary constraints may hinder or limit such development, in addition to outsourcing (contracting out), agencies may resort to borrowing arrangements, collaborating with non-commercial entities or other public administrations.

If, on the one hand, the introduction of new rights such as digital citizenship addresses the need for investment in order to prevent the digital divide, on the other hand it should

MARTINEZ-PLUMED, B. DELIPETREV, *AI Watch. Defining Artificial Intelligence*, Publications Office of the European Union, Luxembourg, 2020.

¹² See, lastly, D.U. GALETTA, *Artificial Intelligence and Public Administration. A Journey*, Editoriale Scientifica, Napoli, 2026.

¹³ Cf. G. MARCHIANÒ, *Intelligenza artificiale: IA specifiche e l'amministrazione provvedimentale - IA generali e i servizi pubblici*, in *www.federalismi.it*, 11, 2021, p. 143.

¹⁴ Cf. B. MARCHETTI, *La garanzia dello Human in the Loop alla prova della decisione amministrativa algoritmica*, in *BioLaw Journal*, 2, 2021, p. 371.



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be noted that the main expenditure concerns measures such as the establishment of general conditions for system interoperability and the integration of service processes across public administrations, since data governance is essential for the deployment of AI systems. In this context, the National Recovery and Resilience Plan, in implementing the once-only principle¹⁵, emphasises the need to achieve full interoperability among public bodies and their databases and information systems.

As a preliminary matter, the issue of digital transformation¹⁶, which bears more directly on administrative organisation, will be examined to the extent that it is relevant to the analysis of algorithmic decision-making.

This essay focuses on the transition towards a model of administrative decision based on algorithms with particular reference to the Italian legal system¹⁷. From this perspective, particular attention will be devoted to the nature and function of the technical rules governing each algorithm, as well as to the relationship between discretionary choices and automated processes. The analysis will also consider the decisive contribution of administrative case law to the development of the so-called principles of algorithmic legality.

The paper rests on the fundamental premise that the certainty of rules constitutes a cornerstone of all legal relationships and, even more significantly, of those between public administrations and private individuals affected by the exercise of public power. The issue goes beyond ensuring impartiality; by employing algorithms, public authorities predetermine their own conduct and, through a gradual reduction in complexity, render the powers conferred upon them by law more measurable and amenable to control. As will be shown, the technical rules governing each algorithm make administrative action more predictable by embodying an *ex ante* exercise of discretion, thereby constraining subsequent activity to remain consistent with the choices embedded in the algorithm.

The transition under consideration, therefore, brings to the fore the question of freedom, which must underpin the legal order in all its manifestations and, in particular, the specific legal framework of administrative law¹⁸. In this context, where individuals encounter the

¹⁵ See *infra* § 2.

¹⁶ For an overview of the state of the art in Europe, including progress towards the 2030 targets set under the Digital Agenda, as well as remaining gaps, policy recommendations, and future priorities within the Digital Decade framework, see the *State of the Digital Decade 2026* available at the following link: <https://digital-strategy.ec.europa.eu/en/library/digital-decade-2026-country-reports>.

¹⁷ The issue of the use of technology by public administrations in Italy, in fact, had already been theorised by M.S. GIANNINI, *Rapporto sui principali problemi della Amministrazione dello Stato*, in *Foro it.*, V, 1979, p. 289. For an even earlier discussion on the introduction of the computer as a new instrument in administrative proceedings, A. PREDIERI, *Gli elaboratori elettronici nella amministrazione dello Stato*, Il Mulino, Bologna, 1971. See also V. FROSINI, *L'organizzazione informatica dello Stato e la libertà del cittadino*, in *Dir. inf.*, 1993, p. 599, and, on the administrative automation, already ID., *Cibernetica diritto e società*, ed. di Comunità, Milano, 1968, p. 41 ff.

¹⁸ Cf. V. CAPUTI JAMBRENGHI, *Libertà e autorità*, I-II, Editoriale Scientifica, Napoli, 2021-2023.



exercise of public authority, it is necessary to explore new paths towards a form of substantive legality that is inseparable from justice.

2. Data governance and digital transition: between organisation and administrative activity

The European Union has positioned itself at the forefront of the development of a regulatory framework aimed at safeguarding fundamental rights and freedoms against the growing influence of digital technologies. This approach is predicated on the recognition that data governance constitutes an indispensable legal prerequisite for the emergence of so-called algorithmic administration.

Article 15 of Directive 95/46/EC recognised the right of every individual not to be subject to a decision based solely on automated processing of personal data where such a decision produces legal effects concerning that individual or similarly significantly affects them. This provision was subsequently incorporated into the General Data Protection Regulation (GDPR)¹⁹, and in particular into Article 22, which provides that «the data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling».

The GDPR marked the beginning of a new regulatory era concerning the impact of digital technologies and paved the way for a series of specific legislative measures that have contributed to the development of a comprehensive EU digital regulatory framework²⁰. These include the Data Governance Act²¹, the Digital Services Act²², the Digital Markets

¹⁹ 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.

²⁰ Cf. L. TORCHIA, *Lo Stato digitale. Una introduzione*, Il Mulino, Bologna, 2025.

²¹ The Regulation (EU) 2022/868 of the European Parliament and of the Council of 30 May 2022 on European data governance and amending Regulation (EU) 2018/1724, applicable from September 2023, establishes a comprehensive legal framework governing data generated or collected by public sector bodies that, when reused for purposes of general interest, may generate significant benefits for society. Accordingly, the Regulation lays down specific conditions governing the re-use, for both commercial and non-commercial purposes, of personal and non-personal data held by public sector bodies by natural or legal persons, where such re-use differs from the original public-service purposes for which the data were produced or collected. At the same time, the Regulation leaves certain aspects of its implementation to the Member States. These include, in particular, the designation of the competent bodies responsible for assisting public authorities in granting or refusing requests for the re-use of data, as well as the designation of the authority entrusted with carrying out the functions relating to the procedures governing data intermediation services.

²² Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services and amending Directive 2000/31/EC.



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Act²³ and the latest Data Act²⁴ and AI Act²⁵. Taken together, these measures establish a legal framework for governing the digital transformation through an approach that seeks to reconcile technological innovation with the protection of fundamental rights and the preservation of fair competition.

Moreover, a comparative analysis of national strategies for the digitalisation of the public sector reveals markedly different approaches across the Member States.

The French legislature, for example, has framed digital transformation within the broader objective of enhancing national competitiveness²⁶ and has, at the same time, mandated the free availability of data held by public authorities and of judicial decisions, thereby facilitating access to a vast body of public sector information and fostering the development of predictive justice tools²⁷. While promoting the openness and re-use of public sector information, however, it has also introduced significant safeguards. Most notably, it has prohibited the profiling of judicial decision-making patterns²⁸ based

²³ Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828.

²⁴ Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on harmonised rules on fair access to and use of data and amending Regulation (EU) 2017/2394 and Directive (EU) 2020/1828. The *Data Act*, which entered into force on 11 January 2024 and has applied since 12 September 2025, introduces a comprehensive set of provisions designed, on the one hand, to enable public authorities to access data held by private entities in situations of public emergency and, on the other hand, to regulate, in exceptional circumstances and in the absence of reasonable alternatives, the sharing of data within a business-to-government framework. The Regulation also establishes specific safeguards against the unlawful transfer of data in cross-border contexts, while ensuring that users of connected products have access to the data they generate, including data generated by related digital services functionally linked to those products. The regulatory framework is further complemented by transparency and interoperability requirements applicable to cloud computing services, which are intended to strengthen competition and prevent technological lock-in.

²⁵ With regard to the initiatives adopted at European level preceding the adoption of Regulation (EU) 2024/1689 and, in particular, to the White Paper on Artificial Intelligence – COM (2020) 65 final of 19 February 2020 – see F. COSTANTINO, *Intelligenza artificiale e decisioni amministrative*, in *Riv. it. sc. giur.*, 8, 2017, p. 383; A. ETZIONI, O. ETZIONI, *Keeping AI legal*, in *Vanderbilt Journal of Entertainment & Technology Law*, 19, 2020, p. 133; C. GRIECO, *Le linee guida della Commissione europea e il libro bianco sull'intelligenza artificiale*, in R. GIORDANO, A. PANZAROLA, A. POLICE, S. PREZIOSI, M. PROTO (eds.), *Il diritto nell'era digitale. Persona, Mercato, Amministrazione, Giustizia*, Giuffrè Francis Lefebvre, Milano, 2022, p. 475; D. IACOVELLI, M. FONTANA, *Nuove sfide della tecnologia e gestione dei rischi nella proposta di regolamento europeo sull'intelligenza artificiale: set di training, algoritmi e qualificazione dei dati. Profili critici*, in *Dir. econ.*, 3, 2022, p. 117; A.F. URICCHIO G. RICCIO, U. RUFFOLO (eds.), *Intelligenza artificiale tra etica e diritti. Prime riflessioni a seguito del libro bianco dell'Unione Europea*, Cacucci, Bari, 2020; M. ZALNIERIUTE, L. BENNETT MOSES, G. WILLIAMS, *The Rule of Law and Automation of Government Decision-Making*, in *The modern law review*, 82(3), 2019, p. 425.

²⁶ Cf. G. RESTA, *Governare l'innovazione tecnologica: decisioni algoritmiche, diritti digitali e principio di uguaglianza*, in *Politica del diritto*, 2019, p. 215 ff.; S. TRANQUILLI, *Rapporto pubblico-privato nell'adozione e nel controllo della decisione amministrativa "robotica"*, in *Dir. soc.*, 2, 2020, p. 285.

²⁷ See Loi n. 2016-1321 du 7 octobre 2016 pour une République numérique.

²⁸ See Loi. n. 2019-222 du 23 mars 2019 de programmation 2018-2022 et de réforme pour la justice.



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exclusively on the automated processing of personal data²⁹, specifically with a view to safeguarding the independence and impartiality of the judiciary.

The German legislature has pursued a strategy that extends beyond the digitalisation of public service delivery³⁰. In particular, its data strategy (*Digitalisierung gestalten*) is founded on the premise that digital transformation can succeed only if it is effectively integrated with broader digital policy initiatives³¹. Accordingly, the strategy seeks to strengthen data interoperability while enhancing the overall competitiveness of businesses, public authorities, civil society, and the research sector³².

These divergent national digitalisation strategies portray a European digital state developing at different speeds³³, with significant disparities in the maturity of digital policies across the Member States.

In Italy, the task of promoting and coordinating the digital transition is primarily entrusted to an administrative agency³⁴, which is responsible for implementing the Italian Digital Agenda. Pursuant to Article 14-*bis* of the Digital Administration Code³⁵, AgID performs planning and monitoring in accordance with the objectives set out in the Three-Year ICT Plans for public administration. Its responsibilities also include the design and implementation of innovation initiatives, the promotion of digital culture, and the provision of advisory services in relation to public procurement procedures conducted by CONSIP.

²⁹ See Loi n. 2018-493 du 20 juin 2018, on the protection of personal data, adopted in order to align French law with the European framework laid down by Regulation (EU) 2016/679 and Directive (EU) 2016/680.

³⁰ C. BUONSANTE, *Big Data e pubblica Amministrazione. Fra Stato digitale e Amministrazioni a diverse velocità*, in *Amministrazione in Cammino*, 1, 2026, p. 15, which further refers to the Estonian experience as a benchmark for assessing the degree of infrastructural integration achievable within a legal system that, through the *Estonian Information System Authority* – a governmental service provider – ensures a single point of access to the state digital infrastructure, which is underpinned by blockchain technology. This infrastructure enables public authorities to access the information necessary for the performance of their respective functions, thereby fully implementing the once-only principle and ensuring a high level of digitalisation of public services for both citizens and businesses.

³¹ Digital sovereignty is not exhausted in the production of legal norms but rather entails a concrete capacity to govern data and digital infrastructures, grounded in governance models inspired by the principles of transparency, accountability, and participation. Digitalisation can be readily deployed across a wide range of economic sectors and throughout society. However, sector-specific regulation may lead to fragmentation and undermine legal certainty for operators. For a general overview, see F. MERLONI (ed.), *Introduzione all'e-government. Pubblica amministrazione e società dell'informazione*, Giappichelli, Torino, 2005.

³² More generally, for an overview of Germany's strategy on artificial intelligence prior to the latest developments at the European level, S. FRANCA, *La regolazione dell'intelligenza artificiale in Germania: stato dell'arte e prospettive future*, in *Riv. reg. merc.*, 1, 2020, p. 51, and, *amplius*, M. SECKELMANN (ed.), *Digitalisierte Verwaltung vernetztes. E-Government*, II ed., ESV, Berlin, 2019.

³³ C. BUONSANTE, *Big Data e pubblica Amministrazione*, cit., p. 16.

³⁴ The Agency for Digital Italy (AgID) was established pursuant to Article 19 of Decree Law no. 83 of 22 June 2012, converted, with amendments, into Law no. 134 of 7 August 2012, and is subject to the direction and supervisory powers of the President of the Council of Ministers or the Minister to whom the relevant functions have been delegated.

³⁵ Legislative Decree no. 82 of 7 March 2005.



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Within this institutional framework, data interoperability³⁶ emerges as a key pillar of the digital transition. From this perspective, particular importance attaches to the “once-only”, an e-government principle according to which citizens and businesses should be required to provide information to public authorities only once³⁷.

The framework outlined above highlights the centrality of the protection of fundamental rights, in particular those relating to the principles of equality and non-discrimination, fundamental freedoms, and privacy. In the Italian context – where the legislative basis for the use of information technologies by public administrations in the exercise of their institutional functions is set out in Legislative Decree no. 82/2005³⁸ – this basis has recently been consolidated in Law no. 132 of 23 September 2025, the first comprehensive national framework on artificial intelligence, aligned with the AI Act and introducing specific domestic features designed to balance rights protection, institutional governance, and technological innovation.

³⁶ Defined by Article 1(1), letter dd, of the Digital Administration Code as the characteristic of an information system, whose interfaces are open and public, to interact automatically with other information systems for the exchange of information and the provision of services.

³⁷ The principle began to emerge in the Italian legal system with the Law no. 124 of 7 August 2015 (so-called Madia Reform), through which the Government was delegated to adopt provisions amending the Legislative Decree no. 82/2005 aimed at guaranteeing citizens and businesses the right to access all data, documents, and services of interest in digital form, as well as simplifying access to personal services by reducing the need for physical access to public offices. It should be noted that the implementation of the once only presupposes the achievement of full interoperability among public bodies and their databases and information systems. Among the guiding principles of the delegation, particular significance – given its innovative nature compared to previous reforms of the DAC – is attached to the redefinition and simplification of administrative procedures in light of requirements of speed and transparency vis-à-vis citizens and businesses, through a regulatory framework based on digitalisation and the full implementation of the “digital first” principle, as well as the reorganisation of the internal procedures of each administration. The delegation was implemented through Legislative Decree no. 179 of 26 August 2016, which brought significant amendments to the Digital Administration Code, subsequently amended also by Legislative Decree no. 217 of 13 December 2017, with a view to simplification and rationalisation. On this point see F. MARTINES, *La digitalizzazione della pubblica amministrazione*, in www.medialaws.eu, 2, 2018; B. RAGANELLI, *Le decisioni pubbliche al vaglio degli algoritmi*, in *Scritti in onore di Eugenio Picozza*, vol. II, Editoriale Scientifica, Napoli, 2019, p. 1388, which notes that the significance of administrative activity in electronic form had also been indirectly recognised in the Consolidated Law on Administrative Documentation (Presidential Decree no. 445 of 28 December 2000). Indeed, Legislative Decree no. 39 of 12 February 1993 had already introduced provisions governing the automated information systems of public administrations, pursuant to Article 2(1), letter mm, of the Law no. 421 of 23 October 1992. Nevertheless, these provisions had only a marginal effect on the digital transformation of the public sector.

³⁸ Cf. M.C. CAVALLARO, G. SMORTO, *Decisione pubblica e responsabilità dell'amministrazione nella società dell'algoritmo*, in www.federalismi.it, 16, 2019, p. 8 ff. For a framework, see G. DUNI, *Amministrazione digitale*, in *Enc. dir.*, Annali I, 2007, p. 13, and, at the monographic level, ID., *L'amministrazione digitale. Il diritto amministrativo nella evoluzione telematica*, Giuffrè, Milano, 2008; D. MARONGIU, *L'attività amministrativa automatizzata. Profili giuridici*, Maggioli, Santarcangelo di Romagna, 2005; A.G. OROFINO, *Forme elettroniche e procedimenti amministrativi*, Cacucci, Bari, 2008; G. PESCE, *Digital First. Amministrazione digitale: genesi, sviluppi, prospettive*, Editoriale Scientifica, Napoli, 2018; ID., *Funzione amministrativa, intelligenza artificiale e blockchain*, Editoriale Scientifica, Napoli, 2021.



A consequence of the innovations introduced by the aforementioned legislative framework is that the general law on administrative procedure³⁹ has been progressively amended, first by Law no. 15 of 11 February 2005 and subsequently by Decree Law no. 76 of 16 July 2020⁴⁰, which introduced the current Article 3-*bis*⁴¹.

The regulation of new technologies within administrative systems has triggered a shift in organisational models towards approaches that overcome the self-referential nature of individual structures, making communication and transparency essential tools for simplification and administrative modernisation⁴². The systemic effect is an enhanced capacity for action on the part of public administrations.

Consider, for instance, the field of public procurement. In this area, the Italian legislature⁴³ has progressively introduced a set of digital tools and procedural reforms aimed at ensuring greater efficiency, transparency, and traceability of procurement procedures, thereby strengthening both administrative coordination and the overall effectiveness of public spending.

The new Public Contracts Code has significantly accelerated the digitalisation process, moving beyond the mere substitution of paper documents with digitally signed files, towards a new approach covering the entire life cycle of public contracts⁴⁴. This lifecycle

³⁹ Law no. 241 of 7 August 1990.

⁴⁰ As converted by Law no. 120 of 11 September 2020.

⁴¹ This provision states that, in order to achieve greater efficiency in their activities, public administrations shall use digital and telematic tools in their internal relations, in relations between different administrations, and in those between administrations and private parties. Cf. F. CARDARELLI, *L'uso della telematica*, in M.A. SANDULLI (ed.), *Codice dell'azione amministrativa*, II ed., Giuffrè, Milano, 2017, p. 510; F. COSTANTINO, *Uso della telematica nella pubblica amministrazione*, in A. ROMANO (ed.), *L'azione amministrativa*, Giappichelli, Torino, 2016, p. 242; S. DETTORI, *Articolo 3-bis. Uso della Telematica*, in N. PAOLANTONIO, A. POLICE, A. ZITO (eds.), *La pubblica amministrazione e la sua azione. Saggi critici sulla legge n. 241/1990 riformata dalle leggi n. 15/2005 e n. 80/2005*, Giappichelli, Torino, 2005, p. 173. The centrality of proper digitalisation as an instrument of administrative simplification is expressly recognised in Article 3-*bis* of Law No. 241/1990, which provides for the use of digital technologies as a means of enhancing the efficiency of administrative action. Cf., on this point, A.G. OROFINO, *La semplificazione digitale*, in *Dir. econ.*, 3, 2019, p. 96.

⁴² Cf. M.T.P. CAPUTI JAMBRENGHI, *Spunti di riflessione su intelligenza artificiale e decisione amministrativa*, in *Aperta contrada*, 12 April 2024; D. Petrakaki, *Accountability in the Context of E-Government*, in P.G. Nixon, V.N. Koutrakou, R. Rawal (eds.), *Understanding E-Government in Europe. Issues and Challenges*, Routledge, Oxford, 2010, p. 100.

⁴³ See, lastly, the Legislative Decree No. 36 of 31 March 2023 (the new Public Contracts Code).

⁴⁴ Cf., for all, D.U. GALETTA, G. CARULLO, C. TOZZI MARTELLI, *Art. 19*, and C. PEPE, *Art. 30*, in S. CIMINI, A. GIORDANO (eds.), *Commentario al Codice dei contratti pubblici*, Edizioni Scientifiche Italiane, Napoli, 2025, p. 189 and p. 269. See, in particular, Article 30(3) of Legislative Decree no. 36/2023, according to which decisions taken by means of automation must comply with the principles of: (a) knowability and comprehensibility, whereby each economic operator is entitled to be informed of the existence of automated decision-making processes concerning them and, where applicable, to receive meaningful information on the logic involved; (b) non-exclusivity of algorithmic decision-making, whereby the decision-making process must in any case include human involvement capable of controlling, validating, or overturning the automated decision; (c) algorithmic non-discrimination, whereby the controller implements appropriate technical and organisational measures to prevent discriminatory effects against economic operators. For the



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is conceived and managed – from design to final verification – through a genuine ecosystem of interoperable IT tools, software, databases, and applications, closely interconnected and capable of ensuring the seamless exchange of data. In many respects, this represents a clear anticipation of principles and rules subsequently affirmed also at European Union level⁴⁵.

It should be emphasised that the principles of digitalisation introduced by the new Public Contracts Code cannot be regarded as ends in themselves. Rather, they constitute an instrumental framework aimed at ensuring the continued effectiveness of the fundamental and traditional principles governing administrative action, as enshrined in Article 97 of the Constitution.

Indeed, when addressing the digitalisation of public administration, reference must be made to a broader evolutionary process through which authorities progressively enhance their use of advanced information technologies made available by technological progress, in order to pursue institutional objectives and, consequently, to give full effect to the constitutional principles governing administrative action.

The deployment of IT tools and the automation of certain decisions – while increasingly encouraged and, in many respects, unavoidable – cannot entail the sacrifice of other constitutional values of equal rank, such as legality, impartiality, and transparency, in the name of efficiency.

As regards the legality, it is well known that administrative activity producing effects vis-à-vis third parties is governed by this principle, which requires the exercise of administrative power to be grounded in law and directed towards the pursuit of the purpose prescribed by law.

From a normative perspective, at European level the principle of legality is recognised in Article 19 TEU and Article 262 TFEU, while in the domestic legal order it may be inferred from Articles 23, 24, 97, 103 and 113 of the Constitution and is expressly enshrined in Article 1 of the General Law on Administrative Procedure, which makes explicit reference to the “modality” laid down by law.

A strand of scholarship has therefore argued that recourse to algorithms or artificial intelligence systems as a modality of administrative action should be subject to an express statutory basis, in accordance with the requirements of the principle of legality and the related reservation of law⁴⁶. From this perspective, the principle of algorithmic legality

codification of algorithmic legality in the field of public procurement, see also M. PASSALACQUA, *Quando la regolazione si fa algoritmo: IA e piattaforme digitali per gli acquisti pubblici*, in *Riv. reg. merc.*, 2, 2025, p. 371 ff., and, with critical observations, particularly regarding the reference to the use of automated decision-making tools in discretionary administrative procedures, A. DI MARTINO, *Tecnica e potere nell'amministrazione per algoritmi*, Editoriale Scientifica, Napoli, 2023, p. 36 ff.

⁴⁵ On this point see Sicily Regional Administrative Court, Catania, Sec. III, 22 April 2026, no. 1157.

⁴⁶ Cf. S. CIVITARESE MATTEUCCI, “Umano troppo umano”. *Decisioni amministrative automatizzate e principio di legalità*, in *Dir. pubbl.*, 2019, p. 34. See also A. LORUSSO, *Algoritmo, provvedimento*



entails, first and foremost, that the possibility of adopting automated decision-making must be grounded in a legal basis⁴⁷.

A different view holds that the decision to adopt and use algorithms and, more generally, artificial intelligence systems in the exercise of administrative functions falls within the self-organisational powers of public authorities⁴⁸, provided that it is permitted by general and programmatic legal provisions⁴⁹. Within this framework, part of the literature has identified the principles of economy, efficiency and effectiveness of administrative action as the legal basis for algorithmic decisions⁵⁰.

Accordingly, it is necessary to rethink administrative organisation also in light of the need for modernisation through the use of instruments provided by technological innovation. The issue becomes particularly relevant in relation to the use of advanced machine learning systems⁵¹. Even in such cases, it may reasonably be argued that the use of artificial intelligence in the exercise of public functions is implicitly authorised by the statutory conferral of administrative powers, insofar as public authorities are required to employ tools capable of maximising the effective implementation of the principle of good administration and of strengthening the guarantees of impartiality in the exercise of discretionary powers.

This approach is not precluded by Article 22 of Regulation (EU) 2016/679⁵², which provides that the data subject shall have the right not to be subject to a decision based

amministrativo e autotutela, in *www.medialaws.eu*, 1, 2023, p. 331; P. OTRANTO, *Riflessioni in tema di decisione amministrativa, intelligenza artificiale e legalità*, in *www.federalismi.it*, 7, 2021, p. 198.

⁴⁷ Cf. Veneto Regional Administrative Court, Sec. III, 21 October 2025, no. 1845.

⁴⁸ Cf. B. MARCHETTI, *La garanzia dello Human in the Loop alla prova della decisione amministrativa algoritmica*, cit., p. 375; L. PREVITI, *Regulation issues of algorithmic administrative decisions: looking for an Italian legislative model*, in *Ius Publicum*, 1, 2020, p. 21; F. SAITTA, *Le patologie dell'atto amministrativo elettronico e il sindacato del giudice amministrativo*, in *Riv. dir. amm. elettr.*, 2003, p. 24. Cf. also G. PESCE, *Organizzazione della pubblica amministrazione e IA*, in *Il diritto nell'era digitale*, cit., p. 521.

⁴⁹ Cf. F. COSTANTINO, *Autonomia dell'amministrazione e innovazione digitale*, Jovene, Napoli, 2012, *passim*; B. MARCHETTI, *Amministrazione digitale*, in *Enciclopedia del diritto: funzioni amministrative*, Giuffrè Francis Lefebvre, Milano, 2022, p. 75.

⁵⁰ For a general overview, see D.U. GALETTA, *Algoritmi, procedimento amministrativo e garanzie: brevi riflessioni anche alla luce degli ultimissimi arresti in materia*, in *Riv. it. dir. pubbl. com.*, 3-4, 2020, p. 504 ff.

⁵¹ Machine learning technology underpins predictive algorithms, which are capable of learning from and acquiring additional data beyond those selected *ex ante* and embedded in the algorithmic formula. In other words, such algorithms are developed through a technology that enables the machine to generate decisions that are further and different from those that could be reached solely on the basis of the data input into the software (including legal provisions, precedents, factual elements, and so forth). Cf. G. PASCERI, *Le incertezze dell'istruttoria nella decisione amministrativa algoritmica*, in *Dir. econ.*, 2, 2023, p. 117, S. VERNILE, *Verso la decisione amministrativa algoritmica?*, in *www.medialaws.eu*, 2, 2020, p. 141, and, widely, G. CARULLO, *Gestione, fruizione e diffusione dei dati dell'amministrazione digitale e funzione amministrativa*, Giappichelli, Torino, 2017.

⁵² On the scope of application of that provision, see the judgment of the European Court of Justice of 7 December 2023, Case C-634/21, *Schufa*, and the commentary by C. SILVANO, *La nozione di "decisione*



solely on automated processing. More precisely, the applicability of that provision is under three cumulative conditions: first, there must be a decision; second, it must be based solely on automated processing, including profiling; and third, it must produce legal effects concerning the data subject or similarly significantly affect him or her.

In this regard, the term “solely” plays a crucial role⁵³ in relations with public administrations. Given that administrative action is structured as a procedural process in which human actors play a decisive role in the formation of the final act, it may be argued that a decision adopted by a public authority in the exercise of its functions is not, strictly speaking, based solely on automated processing⁵⁴.

By virtue of its organisational autonomy⁵⁵, a public authority may establish general *ex ante* rules of conduct to which it commits itself in the exercise of its functions. In other words, if it is accepted that any organised entity can predetermine its future conduct through the adoption of criteria and parameters, it follows that public authorities must likewise be recognised as having the capacity to structure their decision-making processes through the use of appropriate computational models and algorithmic tools⁵⁶.

It is the power, rather than the public authority exercising it, that is subject to automation. Only if one were to accept that an algorithm, irrespective of its practical capabilities⁵⁷, is

completamente automatizzata” sotto la lente della Corte di Giustizia: il caso Schufa, in CERIDAP, 4, 2024, p. 270.

⁵³ Cf. G. CARULLO, *Decisione amministrativa e intelligenza artificiale*, in *Dir. inf.*, 3, 2021, p. 458.

⁵⁴ It should also be noted that the aforementioned right, and the corresponding prohibition, do not apply where processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller. Moreover, pursuant to Article 23 GDPR, the exercise of the right provided for in Article 22 GDPR may be restricted by both Union and national law, provided that such a restriction respects the essence of the fundamental rights and freedoms and is a necessary and proportionate measure in a democratic society to safeguard one or more of the public interests expressly enumerated therein. Those interests are defined in sufficiently broad terms to encompass, or at least substantially overlap with, the vast majority of functions entrusted to public authorities.

⁵⁵ On the power of administrative self-organisation, cf. M. NIGRO, *Studi sulla funzione organizzatrice della pubblica amministrazione*, Giuffrè, Milano, 1966; A. ROMANO, *Autonomia nel diritto pubblico*, in *Dig. disc. pubbl.*, vol. II, Torino, 1987, p. 34 ff.

⁵⁶ The foundations of a similar perspective can already be discerned in A. MASUCCI *L'atto amministrativo informatico. Primi lineamenti di una ricostruzione*, Jovene, Napoli, 1993, p. 86.

⁵⁷ Cf. A. SCOGNAMIGLIO, *Decisione amministrativa algoritmica e garanzie*, in *Scritti in onore di Eugenio Picozza*, vol. III, Editoriale Scientifica, Napoli, 2020, p. 2261; A. SIMONCINI, S. SUWEIS, *Il cambio di paradigma nell'intelligenza artificiale e il suo impatto sul diritto costituzionale*, in *Riv. fil. dir.*, 8, 2019, p. 100. The phenomenon has also been conceptualised as a shift from *street-level bureaucracy* to *screen-level bureaucracy*, that is, from a decision-making context in which discretionary power lies exclusively with the public official (street-level bureaucracy) to one in which the official's role becomes largely formal, while the substantive decision is effectively generated by an electronic system into which specific software has been installed and into which the data relating to the individual administrative procedure have been input (screen-level bureaucracy): M. D'ANGELOSANTE, *La consistenza del modello dell'amministrazione “invisibile” nell'età della tecnificazione: dalla formazione delle decisioni alla responsabilità per le decisioni*, in S. CIVITARESE MATTEUCCI, L. TORCHIA (eds.), *La tecnificazione*, in L. FERRARA, D. SORACE (eds.), *A 150 anni dall'unificazione amministrativa italiana*, vol. IV, Firenze University Press, 2017, p.



genuinely capable of replacing the authority vested with the power to adopt an administrative decision would it be necessary to require an express statutory basis for its use. In reality, as has also been recognised by a line of administrative case law⁵⁸, technological developments necessarily entail a corresponding evolution in the manner in which the general principles governing administrative action are applied⁵⁹.

Those principles are capable of legitimising the use of procedural mechanisms that would have been inconceivable when the administrative system first took shape. This perspective extends beyond simplification and encompasses the principle of good administration. Technology is regarded not merely as a means of streamlining the decision-making process, but also as a means of enhancing the quality of administrative decisions.

3. Graduality and transparency in the construction of algorithmic administrative decision-making

A public authority seeking to harness the advantages of algorithmic decision-making must predetermine the possible outcomes that may be reached at the conclusion of an individual administrative procedure. This approach also applies where the power in question is discretionary, since the exercise of discretion can itself be articulated as a rational and logically structured process⁶⁰.

Before addressing this point further, it is worth recalling the view according to which algorithmic tools may play a role at the various stages of the administrative procedure⁶¹:

157; L. VIOLA, *L'intelligenza artificiale nel procedimento e nel processo amministrativo: lo stato dell'arte* in *www.federalismi.it*, 21, 2018, p. 4.

⁵⁸ Cf. Lazio Regional Administrative Court, Rome, Sec. III-bis, 22 March 2017, no. 3769. Indeed, already the Council of State, Sec. VI, 7 February 1995, no. 152, had recognised that the use of computerised procedures and electronic machines in the performance of administrative activity must be regarded as admissible, also in light of the greater objectivity and impartiality that such machines can ensure, particularly in the execution of repetitive tasks, being unaffected by the decline in attentional capacity that occurs in humans after a certain period of engagement with the same task. See also the judgment of the Campania Regional Administrative Court, Naples, Sec. I, 26 October 1992, no. 333, which held that there were no legal or technical obstacles to the broader use of information systems in the operational management of public administration, since both the principle of the typicity of administrative acts and the structure of administrative procedures facilitate, and indeed encourage, the transition towards digitally enabled administrative management.

⁵⁹ Cf., on this point, L. CARBONE, *L'algoritmo e il suo giudice*, in *www.giustizia-amministrativa.it*, 2023.

⁶⁰ Cf. F. SAITTA, *Le patologie dell'atto amministrativo elettronico e il sindacato del giudice amministrativo*, cit., p. 18. This approach is consistent with the underlying premise that the theory of rational choice applies to the exercise of administrative discretion: on this issue, see A. ZITO, *Teoria della scelta razionale e teoria giuridica della discrezionalità amministrativa: prolegomeni per un inquadramento sistematico*, in *Nuove auton.*, 1, 2022, p. 87.

⁶¹ Cf. Veneto Regional Administrative Court no. 1845/2025. For a discussion in the legal scholarship, cf. D.U. GALETTA, *Algoritmi, procedimento amministrativo e garanzie*, p. 501 ff.; G. PESCE, *Intelligenza artificiale, procedimento e soluzione dei conflitti fra interessi*, in *Il diritto nell'era digitale*, cit., 2022, p. 505 ff.; and, *amplius*, A. MASUCCI, *Procedimento amministrativo e nuove tecnologie. Il procedimento amministrativo elettronico a istanza di parte*, Giappichelli, Torino, 2011.



at the initiation stage, for instance, through the automated acquisition of data concerning the applicant from administrative databases, or through the detection of sanctionable conduct or failures to comply with legal obligations by means of automated data-processing systems; at the investigative stage, where the ascertainment and legal qualification of facts may be performed through the interrogation of databases; at the decision stage; and, potentially, at the stage concerning the effectiveness of the administrative act.

From this perspective, algorithmic analysis may function both as a cognitive tool, enabling the rapid and simultaneous processing of heterogeneous information underlying administrative action, and as a decisional code, where the output of the computational process coincides with the content of the administrative decision itself.

Where algorithms operate in a merely supportive capacity, they remain ancillary to human judgment, facilitating its informational and analytical foundations. By contrast, where the output effectively determines the content of the administrative act, algorithmic analysis assumes a partially decisional role. While both configurations mark the transition from the analogue to the digital dimension of administrative activity and organisation, only the latter entails a paradigmatic shift affecting the very substance of public decision-making. This transformation, set against evolving conceptions of space and time, calls for renewed reflection on how public administrations process data and information, and on their capacity to identify and address citizens' needs through new modalities of public action, including the automation of tasks traditionally reserved for public officials.

In any configuration, the recourse to algorithms cannot justify any reduction in the procedural safeguards guaranteed by administrative law, including the identification of the responsible officer, the duty to state reasons, and participatory rights.

Among these safeguards, the principle of transparency is of particular significance, with the duty to state reasons as its immediate corollary. Such duty cannot be eliminated or attenuated by the mere involvement of algorithmic processes. On the contrary, where administrative action rests on complex computational systems, it is reinforced, requiring that the final decision be not only accessible but also intelligible.

The use of algorithms finds application across a wide range of contexts⁶². Reference may be made, as previously noted, to public procurement procedures and, *inter alia*, to the healthcare system, the application of the Highway Code, the allocation of teaching staff mobility and, more generally, the education and training system, including universities and research institutions, to public security or the determination of certain tariffs of water

⁶² From a comparative perspective, with particular regard to the fields of tax, environmental, and food law, see A. SIMONCINI, *Amministrazione digitale algoritmica. Il quadro costituzionale*, in *Il diritto dell'amministrazione pubblica digitale*, cit., p. 7.



and energy⁶³. Furthermore, the use of algorithms for the automated formation of rankings for the allocation of grants or subsidies is increasingly frequent, pursuant to Article 12 of the Law no. 241/1990 which requires the prior publication of criteria and parameters governing administrative action.

Regardless of the specific subject matter and the nature of the power exercised, the decisional rule embedded in the algorithm is typically of human origin and can be understood as an *ex ante* determination of the weight to be attributed to facts and interests⁶⁴ which, through algorithmic implementation, results in automated decision-making.

Accordingly, even where no particular obstacles exist to the use of algorithms in the context of bound administrative activity⁶⁵, it must nevertheless be considered that the design of the algorithm constitutes an exercise of anticipatory discretion⁶⁶. The administration, in fact, retains the ability to reduce the discretionary margin of final assessments through the prior determination of evaluation criteria sufficiently precise to be susceptible to automation.

The activity of public authorities is increasingly constrained by detailed rules of conduct, whereby the exercise of power is structured not only by legislation, but also by general administrative acts, guidelines, and regulatory instruments. This, in turn, expands the scope for the potential automation of administrative decision-making.

In this context, the use of algorithms in processes involving decisions that affect both the public and private spheres is grounded in the expected gains in terms of efficiency, cost-effectiveness, and neutrality, understood as the outcome of rational calculations based on data. However, the adoption of predictive models and the criteria according to which data are collected, selected, systematised, ordered, and combined, as well as their

⁶³ Cf., *amplius*, G. AVANZINI, *Decisioni amministrative e algoritmi informatici. Predeterminazione, analisi predittiva e nuove forme di intellegibilità*, Editoriale Scientifica, Napoli, 2019, p. 41 ff.

⁶⁴ Cf. G. AVANZINI, *Decisioni amministrative e algoritmi informatici*, cit., p. 131 f., which highlights the particular sensitivity of the exercise, as opaque or ambiguous criteria may ultimately distort the outcome.

⁶⁵ See already G. DUNI, *L'utilizzabilità delle tecniche elettroniche nell'emanazione degli atti e nei procedimenti amministrativi. Spunto per una teoria dell'atto emanato nella forma elettronica*, in *Riv. amm. Rep. Italiana*, 1978, p. 407. Cf., more recently, F. FOLLIERI, *Decisione amministrativa ed atto vincolato*, in *www.federalismi.it*, 7, 2017; L. MUSSELLI, *La decisione amministrativa nell'età degli algoritmi: primi spunti*, in *medialaws.it*, 1, 2020, p. 26. In the opinion of G.M. ESPOSITO, *Al confine tra algoritmo e discrezionalità. Il pilota automatico tra procedimento e processo*, in *Dir. e proc. amm.*, 1, 2019, p. 39, both bound administrative acts and acts involving technical discretion fall within the scope of algorithmic decision-making. See also A. DI MARTINO, *Tecnica e potere nell'amministrazione per algoritmi*, cit., p. 157 f. For L. VIOLA, *L'intelligenza artificiale nel procedimento e nel processo amministrativo*, cit., the advantages of automating administrative decision-making processes are particularly evident in the context of repetitive or standardised procedures. A similar position is adopted by I.M. DELGADO, *Automazione, intelligenza artificiale e pubblica amministrazione*, cit., p. 657.

⁶⁶ V. BUSCEMA, *Discrezionalità amministrativa e reti neurali artificiali*, in *Foro amm.*, 1993, p. 620, already argued that the development of algorithms capable of intelligently assisting public officials, including in the exercise of discretionary powers, was already a realistic prospect.



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interpretation and the consequent formulation of judgments, are all operations that inevitably reflect precise choices and values.

It follows that such tools are called upon to make a series of determinations that largely depend on the criteria adopted and the reference data used. In this respect, beyond the accuracy of the algorithm itself⁶⁷, it is necessary to ensure its impartiality and transparency⁶⁸.

Attention must therefore shift upstream, to the design of the algorithm itself: to the selection and combination of its parameters – an inherently subjective process – and, at an even earlier stage, to the generation of the data and variables on which those parameters are based⁶⁹. An automated administrative act adopted through electronic means is no different in substance from one adopted by a human decision-maker. What distinguishes the two is that the cognitive, evaluative, and decisional processes underlying the administrative decision are formalised and embedded in the algorithm.

The identification of the elements to be incorporated into the algorithm marks the point at which a discretionary choice is made, with the consequence that the guarantees ordinarily accompanying any administrative decision must be anticipated to these preliminary stages in the algorithm's lifecycle.

⁶⁷ Cf. R. CAVALLO PERIN, *Ragionando come se la digitalizzazione fosse data*, in *Dir. amm.*, 2, 2020, p. 310. For a discussion of the digitalisation of public administrations and the datafication of the administrative function, see A. DI MARTINO, *Tecnica e potere nell'amministrazione per algoritmi*, cit., p. 36 ff. On the role of data governance as a cornerstone of algorithmic administration and as a prerequisite for the integration of artificial intelligence in a manner consistent with the principles of legality, transparency, and good administration in relations among public administrations and between public administrations and citizens, G. CARULLO, *Big Data e pubblica amministrazione nell'era delle banche dati interconnesse*, in *Conc. e mercato*, 1, 2016, p. 181; C. CASTALDO, *Big data, power and knowledge. Regulatory aspects of access to big data and the digital service act package*, in *Ius Publicum*, 1, 2022; M. FALCONE, *Big data e pubbliche amministrazioni: nuove prospettive per la funzione conoscitiva pubblica*, in *Riv. trim. dir. pubbl.*, 3, 2017, p. 601; G. GALLONE, *Blockchain e big data nel settore pubblico: spunti in tema di G.D.P.R. compliance*, in *www.federalismi.it*, 14, 2022, p. 66; A. MASUCCI, *L'automatizzazione delle decisioni amministrative algoritmiche fra big data e machine learning. Verso l'algocratic governance?*, in *Dir. e proc. amm.*, 2, 2022, p. 265; G. PESCE, *Diritto amministrativo e intelligenza artificiale: i problemi*, in *Giur. it.*, 6, 2022, p. 1514; R. ROLLI, M. D'AMBROSIO, *L'algoritmo nella Pubblica Amministrazione. L'innovazione tecnologica come strumento di contrasto del virus Covid-19 e la necessità di una visione antropocentrica*, in *Dir. econ.*, 3, 2021, p. 218.

⁶⁸ The use of algorithms and AI challenges the traditional understanding of administrative procedure as the legal framework through which administrative power is exercised. This development underscores the need for algorithmic decision-making to be governed by the principles of transparency and explainability. Cf., on this point, A. BARTOLINI, *Diritto amministrativo dell'innovazione tecnologica*, Giappichelli, Torino, 2026, xii. See, furthermore, C. BENETAZZO, *ICT e nuove forme di interazione tra cittadino e Pubblica Amministrazione*, in *medialaws.eu*, 2, 2020, p. 269; F. CARDARELLI, *Amministrazione digitale, trasparenza e principio di legalità*, in *Dir. inf.*, 2, 2015, p. 227; M. MACCHIA, A. MASCOLO, *Intelligenza artificiale e sfera pubblica: lo stato dell'arte*, in *Giorn. dir. amm.*, 4, 2022, p. 556; F. MANGANARO, *Trasparenza e digitalizzazione*, in *Dir. e proc. amm.*, 2019, p. 25; and, more generally, E. CARLONI, *Il paradigma trasparenza. Amministrazioni, informazione, democrazia*, Il Mulino, Bologna, 2022.

⁶⁹ Cf. Council of State, Sec. VI, 13 December 2019, no. 8472.



Of fundamental importance in this regard, as noted above, is the principle of transparency, which serves to ensure the intelligibility and traceability of the algorithm's design and, where appropriate, to facilitate judicial review of measures adopted on its basis.

Many transactional processes between private parties, particularly in the financial and insurance sectors, are governed by algorithms. These operations, however, are grounded in consent, as the parties accept the "rules of the game" and, in a sense, place their trust in them⁷⁰.

The relationship between private individuals and public administration is not based on consent, which may exist but is normally external to the structure of the administrative relationship⁷¹. Public administration, on the other hand, is bound to act in accordance with a duty of impartiality – distinct from neutrality – pursuant to rules and principles that also have constitutional status⁷².

As will be further discussed in the next paragraph, the algorithm underlying automated administrative decision-making must therefore be knowable, that is, transparent throughout all its stages: from its authorship to the procedures employed in its development, including the priorities assigned within the evaluative process and the data identified as relevant⁷³. This is because automated procedures cannot entail a diminished level of protection against distortions in the exercise of public power which may, in a sense, arise upstream of the process, ultimately affecting judicial review, which is consequently required to engage with an entirely novel form of procedural mediation.

It cannot reasonably be disputed that the routinisation produced by algorithms enhances efficiency and provides a safeguard against external political pressures, thereby contributing to the protection of the right to good administration. It also makes it possible to strengthen the substantive dimension of public decisions in accordance with the principles of impartiality, equality, good faith, and the protection of legitimate expectations, since foreseeability translates into a reasonable degree of certainty in the conduct of public authorities and, more broadly, in the democratic character of the administrative system.

In this context, the protection of legitimate expectations and the duty of the public administration to act in good faith, now recognised as general principles governing administrative action, constitute essential elements in the transition towards a model of

⁷⁰ Cf. J.M. BALKIN, *The Three Laws of Robotics in the Age of Big Data*, in *Ohio State Law Journal*, 78, 2017, p. 1219 ff.; S. ZUBOFF, *The Age of the Surveillance Capitalism. The Fight for a Human Future at the New Frontier of Power*, London, 2019.

⁷¹ F. PATRONI GRIFFI, *La decisione robotica e il giudice amministrativo*, in www.giustizia-amministrativa.it, 2018. See also A. CHIARIELLO, *The impact of artificial intelligence on public sector and on public services*, in *Ius Publicum*, 2, 2022; F. PUBUSA, *Le scelte digitali dell'amministrazione: le implicazioni sul regime dell'organizzazione e dell'attività*, in *Dir. e proc. amm.*, 4, 2022, p. 1085.

⁷² F. PATRONI GRIFFI, *La decisione robotica e il giudice amministrativo*, cit.

⁷³ Cf. Council of State, Sec. VI, 8 April 2019, no. 2270.



administrative decision based on algorithms. These principles are, indeed, the cornerstones of administrative predetermination⁷⁴; any analysis of algorithmic decision-making should therefore proceed from the perspective of such predetermination.

The notion of predetermination is closely connected with the identification of parameters (or standards) enabling citizens, on the one hand, to anticipate the outcomes of administrative action and, on the other, to assess its results⁷⁵. Conceiving of a public administration that predetermines its own conduct therefore entails envisaging a shift in the exercise of discretion from the final stage of the process to an earlier stage involving the assessment and balancing of the interests at stake.

The tendency to relocate discretionary choice from the strictly operational phase to an earlier stage, and to attribute independent legal significance to such prior assessment, is not a novel phenomenon⁷⁶. It is therefore reasonable to assume that algorithms may contribute to redefining the locus of administrative choices and to shaping a different model of administrative action, based on preconfigured solutions and characterised by a gradual reduction in complexity.

The issue at stake is not limited to ensuring administrative impartiality. Rather, it concerns the translation of value-based choices into technical rules capable of governing algorithmic systems, thereby consistently producing predetermined outcomes while preserving the transparency of the processes through which decisions are reached. This gives rise to a form of objectification fostered by scientific and technological advancement, rendering the exercise of public power increasingly measurable and, consequently, subject to more effective forms of control.

As has been noted⁷⁷, algorithmic procedures and digital administrative decisions require public administrations to operate according to a systemic logic, namely by monitoring

⁷⁴ Cf. A. POLICE, *La predeterminazione delle decisioni amministrative. Gradualità e trasparenza nell'esercizio del potere discrezionale*, Edizioni Scientifiche Italiane, Napoli, 1997, p. 67 ff. This Author is fully aware that, particularly in light of the German doctrinal elaboration of the principle of *Selbstbindung der Verwaltung* (self-binding administrative action), the emergence of predetermined criteria governing the assessment of facts and competing interests has traditionally been anchored in the principle of impartiality. Indeed, there is little doubt that such forms of *ex ante* predetermination help prevent the exercise of administrative discretion from degenerating into arbitrariness. At the same time, routinisation enables administrative authorities to deal more efficiently with individual cases while shielding decision-making from political pressures (J.L. JOWELL, *Law and Bureaucracy: Administrative Discretion and the Limits of Legal Action*, Associated Faculty Press Inc., 1975, p. 195). Conversely, if the rationale for administrative predetermination were to lie exclusively in the principle of impartiality, there would be no need for the gradual publication and progressive externalisation of the relevant instruments. As the Author observes, these underlying policy choices could remain internal to the administration and be disclosed only after the adoption of the final administrative decision, as part of the statement of reasons accompanying the decision itself.

⁷⁵ A. POLICE, *La predeterminazione delle decisioni amministrative*, cit., p. 59.

⁷⁶ Cf. A. POLICE, *La predeterminazione delle decisioni amministrative*, cit., p. 105.

⁷⁷ R. CAVALLLO PERIN, I. ALBERTI, *Atti e procedimenti amministrativi digitali*, in *Il diritto dell'amministrazione pubblica digitale*, cit., p. 150.



compliance with previously defined standards and, where necessary, revising general or regulatory acts and recalibrating the parameters that will guide future administrative choices. Administrative action is thus progressively removed from elements of uncertainty.

The technical rules embedded in algorithms are, in this respect, characterised by an inherent flexibility⁷⁸ that enables the potential margin of error in algorithmic outputs to be progressively reduced⁷⁹. They can therefore play a decisive role in constructing a more transparent and predictable model of administrative action, fostering in those subject to administrative authority a legitimate expectation as to the outcome⁸⁰. Where such expectation is frustrated, these rules become the primary benchmark against which the final administrative decision may be assessed⁸¹. Indeed, whenever a public administration establishes criteria intended to guide its future conduct, a form of comparability arises among the administrative acts subsequently adopted⁸².

In such a process, there is no restriction of discretionary power; rather, what occurs is merely the anticipatory exercise of such power. For this reason, it would be inappropriate to refer to self-limitation or self-binding of the public administration.

Algorithms may be understood as objective and predetermined guiding standards for the exercise of public authority, including discretionary powers. At most, a form of self-binding could be envisaged in cases concerning non-discretionary administrative action. The association of algorithms with forms of administrative predetermination allows them to be substantially assimilated to acts of predetermination through which, it should be reiterated, public power is exercised in advance. Legal scholarship has observed that the technical rules governing algorithms perform the function traditionally fulfilled by general administrative acts⁸³. In light of the foregoing considerations, this observation can be fully endorsed.

⁷⁸ This reflects the inherently dynamic character of the technical rules embedded in algorithmic systems, which are capable of evolving over time to a much greater extent than rules providing for the normative predetermination of administrative action. On the greater flexibility of these forms of administrative predetermination, as compared with normative predetermination, see P.M. VIPIANA, *L'autolimita della pubblica amministrazione. L'attività amministrativa fra coerenza e flessibilità*, Giuffrè, Milano, 1990, p. 518.

⁷⁹ Cf. R. CAVALLO PERIN, I. ALBERTI, *Atti e procedimenti amministrativi digitali*, cit., p. 142.

⁸⁰ This position is advanced by A. POLICE, *La predeterminazione delle decisioni amministrative*, cit., p. 295.

⁸¹ See A. POLICE, *La predeterminazione delle decisioni amministrative*, cit., p. 313, who observes that the rules and parameters adopted as underlying policy choices, prior to the adoption or non-adoption of one or more administrative decisions implementing them, cease to be the object of judicial review and instead become the standard against which subsequent administrative action is reviewed.

⁸² Cf., on this point, P.M. VIPIANA, *L'autolimita della pubblica amministrazione*, cit., p. 190.

⁸³ A. POLICE, *Scelta discrezionale e decisione algoritmica*, in *Il diritto nell'era digitale*, cit., p. 499 f. On the use of algorithms as instruments for structuring and anticipating administrative action, cf. also G. AVANZINI, *Decisioni amministrative e algoritmi informatici*, cit., p. 39 f. On software as a general



Acts of administrative predetermination are not characterised by any specific form. They may consist of directives, planning instruments, circulars, instructions, or any other administrative measure relating to organisational or functional aspects of administrative activity, insofar as such instruments are capable of defining in advance the purposes, objectives, expected results, priorities, methods, and timelines of administrative action⁸⁴. Through the technical rules governing each algorithm, public authorities predetermine the conditions under which the powers conferred by law will be exercised. By encoding the values and priorities underlying decision-making choices⁸⁵, algorithms establish in advance the foundations of the reasoning process that will ultimately be incorporated into the statement of reasons accompanying the administrative decision⁸⁶.

From this perspective, particular attention should be paid to the interpretation according to which the statement of reasons constitutes the assumption of responsibility for the entire administrative activity, having regard to the range of possible alternatives⁸⁷. In automated procedures, the statement of reasons therefore operates as a safeguard against the progressive dissociation of administrative action from the responsibility of the public authority⁸⁸. Irrespective of the legal qualification attributed to it, an algorithm cannot, in any event, bring the administrative procedure to an end⁸⁹, since it is the exercise of public power, rather than the public authority itself, that is subject to automation.

4. Discretionary power and algorithmic administrative decision. The creative case law on the fundamental principles of algorithmic legality

administrative act, see already U. FANTIGROSSI, *Automazione e pubblica amministrazione. Profili giuridici*, Il Mulino, Bologna, 1993, p. 109.

⁸⁴ Cf. A. POLICE, *La predeterminazione delle decisioni amministrative*, cit., p. 239 ff.

⁸⁵ On the determination, through general administrative acts, of the relative weight attributed to the various interests at stake, which contributes to shaping the hierarchy of priorities, see G. DELLA CANANEA, *Gli atti amministrativi generali*, Cedam, Padova, 2000, p. 235.

⁸⁶ On the techniques for drafting the statement of reasons accompanying algorithmic decisions, cf. A. DI MARTINO, *Tecnica e potere nell'amministrazione per algoritmi*, cit., p. 260 ff. With particular regard to reasoning by reference (*per relationem*) in algorithmic procedures, see F. SAITTA *Le patologie dell'atto amministrativo elettronico e il sindacato del giudice amministrativo*, cit., p. 22, and, more recently, G. MARCHIANÒ, *La legalità algoritmica nella giurisprudenza amministrativa*, in *Dir. econ.*, 3, 2020, p. 246.

⁸⁷ Cf. A. CASSATELLA, *Il dovere di motivazione nell'attività amministrativa*, Cedam, Padova, 2013, p. 227 ff.

⁸⁸ Cf., *amplius*, G. AVANZINI, *Decisioni amministrative e algoritmi informatici*, cit., p. 147 ff. Within this conceptual framework, reference may be made to the reflections of M. RAMAJOLI, B. TONOLETTI, *Qualificazione e regime giuridico degli atti amministrativi generali*, in *Dir. amm.*, 1-2, 2013, p. 115, according to whom the validity regime of administrative decisions is centred on the statement of reasons, on the requirement that administrative choices remain anchored in factual reality, and on the capacity of the concrete public interest pursued to justify the sacrifice imposed on private parties. Insofar as administrative action, even when addressing matters of considerable breadth and complexity, ultimately culminates in specific decisions, the legal framework governing administrative decision-making should prevail. The general nature of the measure concerned should not be invoked as a pretext for shielding administrative choices from judicial review of their legality.

⁸⁹ Cf., on this point, R. CAVALLO PERIN, I. ALBERTI, *Atti e procedimenti amministrativi digitali*, cit., p. 139.



Technical rules governing the algorithm ultimately remain administrative rules⁹⁰, designed by humans⁹¹ and applied by machines, which, upon closer inspection, perform a function similar to that carried out by general administrative acts. From this perspective, algorithms express a form of administrative predetermination.

Unlike regulatory acts, which impose external constraints on administrative action, predetermination acts do not embody a genuine legal command⁹² but introduce constraints of internal coherence on the future exercise of the power. Accordingly, any constraints they generate are not external legal limits but requirements of internal consistency governing the subsequent exercise of the residual discretionary power.

Such an approach avoids limiting the use of algorithms to cases involving bound administrative action. Rather, it points to the prospective reconfiguration of certain legal institutions⁹³ and makes it plausible to envisage algorithms as contributing to a

⁹⁰ Cf. R. FERRARA, *Il giudice amministrativo e gli algoritmi. Note estemporanee a margine di un recente dibattito giurisprudenziale*, in *Dir. amm.*, 4, 2019, p. 785.

⁹¹ On the indispensable need to ensure that a minimum degree of human involvement is always preserved in the exercise of administrative functions, see G. GALLONE, *Riserva di umanità e funzioni amministrative*, cit., p. 146. Cf. also A. BARTOLINI, *Diritto amministrativo dell'innovazione tecnologica*, cit., p. 173 ff.

⁹² On the absence of a proper legal command in administrative acts of predetermination, see moreover A. POLICE, *La predeterminazione delle decisioni amministrative*, cit., p. 214. According to the now well-established view, the use of algorithms by public authorities constitutes a form of digital administrative action and cannot result in the complete delegation of decision-making power to an automated system, particularly in proceedings involving evaluative or discretionary assessments (cf., *ex multis*, Lazio Regional Administrative Court, Rome, Sec. III-bis, 2 February 2026, no. 1895). In this regard, as will be discussed more fully, the Council of State has held that the use of algorithmic procedures is lawful only where the administration retains effective powers of oversight and remains responsible for the decision, whereas administrative determinations based solely on automated mechanisms are precluded.

⁹³ Extremely interesting, in this regard, is the analysis conducted by L. CARBONE, *L'algoritmo e il suo giudice*, cit., who examines a number of judgments of the administrative courts, all of which share the capacity to identify pathways of legal protection through the construction of realistic and innovative solutions. The first is Council of State, Sec. III, no. 8435 of 28 December 2020, which concerns the case of a private individual excluded from a funding scheme because the project documentation, submitted entirely online, had not been digitally signed. In that case, it was observed that the electronic procedure contained clear elements from which the authorship could be unequivocally inferred, even in the absence of a digital signature, in accordance with a modern form of participation in electronic administrative proceedings. It therefore appears irrational to accept the user account identifier and subsequently exclude the applicant for the absence of a digital signature. In this case, as observed by the Author, the Council of State seems to impose on the administration a form of *ante litteram* duty of diligence, a *sui generis* form of evidentiary assistance, with respect to the strict application of the electronic procedure. Similarly, Campania Regional Administrative Court, Naples, Sec. IV, 26 July 2021, no. 5238 (confirmed by Council of State, Sec. VII, 2 May 2023, no. 4444), held that the technical difficulties that may arise in remote competitive procedures cannot irreparably prejudice participation in such procedures and thus appears to lay the groundwork for a general principle according to which the use of information technology in administrative procedures must not harm participants: it is the public administration that must bear the burden of any system malfunctions. Finally, Lombardy Regional Administrative Court, Milan, Sec. III, 6 April 2022, no. 778, also in the context of competitive procedures, deals with the case of a candidate who had left a field in the application form blank, yet the system had nonetheless sent a confirmation email complete with an identification code. The Court annulled the exclusion decision – the Author further observes – seemingly laying the foundations for a sort of principle of digital reliance.



reallocation of decision-making authority, as discussed above, through a gradual reduction in complexity. This is premised on the absence of any self-binding mechanism, although, in such circumstances, the discretionary component inherent in the exercise of public power is progressively reduced.

By means of algorithms, public administrations establish standards of conduct that do not preclude the selection of the solution most appropriate to the specific case or the balancing of the various interests entrusted to them for protection under the law. Nevertheless, the requirement of consistency⁹⁴ generated by these standards tends to make subsequent administrative action more objective.

Moreover, characterising the algorithm as a predetermined stage in the exercise of administrative discretion entails the need to locate the relevant safeguards of legality at that earlier stage⁹⁵. These safeguards may be articulated through a set of principles developed by the courts, capable of balancing the risks and limitations⁹⁶ associated with administrative decision-making in the age of algorithms⁹⁷, thereby ensuring that the individuals concerned are afforded effective judicial protection.

Against this background, the following analysis focuses on a series of landmark judgments⁹⁸ of the Council of State, which proceed from the premise that the use of fully automated procedures leading directly to the adoption of the final administrative decision should not be regarded with suspicion but should, in principle, be encouraged.

For completeness, it should be noted, however, that the first-instance administrative court had already clarified that, given the complexity of technical language, individuals must be guaranteed the right to receive meaningful information about the logic underlying the process through which the decision is reached.

In one case, the administration sought to limit access to the instructions of the calculation algorithm alone⁹⁹. Lazio Regional Administrative Court no. 3769/2017, in a now-final judgment, held instead that software written in programming languages not immediately intelligible – neither to the public official using it nor to the private party addressed by the administrative act – and developed by a technically qualified private operator, qualifies the source code, and thus the algorithm itself, as an administrative act subject to

⁹⁴ On the concept of “requirement of consistency”, see G. DELLA CANANEA, *Gli atti amministrativi generali*, cit., p. 220.

⁹⁵ A. POLICE, *Scelta discrezionale e decisione algoritmica*, cit., p. 502.

⁹⁶ Cf. F. COSTANTINO, *Rischi e opportunità del ricorso delle amministrazioni alle predizioni dei big data*, in *Dir. pubbl.*, 1, 2019, p. 43.

⁹⁷ Cf. L. MUSSELLI, *La decisione amministrativa nell'età degli algoritmi*, cit.

⁹⁸ L. CARBONE, *L'algoritmo e il suo giudice*, cit.

⁹⁹ For an early discussion of the issues raised by the use of automated administrative decision-making with regard to the right of access, see F. PUBUSA, *Diritto di accesso ed automazione. Profili giuridici e prospettive*, Giappichelli, Torino, 2006.



full access¹⁰⁰. In this way, legal protection was extended to a new category of administrative acts and activities, reflecting a paradigm that now appears unavoidable.

The system of attribution based on the organic theory remains unaffected, as does the corresponding regime of liability¹⁰¹. The decision ultimately remains attributable to a human decision-maker¹⁰² – in computational terms, this is commonly referred to as a HITL (human-in-the-loop) model, whereby the system requires human interaction to generate its result – even though, in practice, that decision-maker is likely to align with the algorithmic output because of the practical authority exerted by automated systems. This, in turn, underscores the need for an effective adversarial procedure at the design stage, requiring a particularly robust application of the principle of transparency, beginning with access to the source code.

From this perspective, case law tends to overcome the limitation of algorithmic decision-making to cases of bound administrative activity, extending its application also to areas characterised by administrative discretion, where a residual margin of political evaluation is inevitably present. While the use of IT tools appears more straightforward in bound activities – where multiple possible outcomes may be determined through statistical or

¹⁰⁰ Cf. I. FORGIONE, *Il caso dell'accesso al software Miur per l'assegnazione dei docenti*, in *Giorn. dir. amm.*, 3, 2018, p. 647. See also Council of State, Sec. VI, no. 2270/2019, § 8.2. Without prejudice to the considerations set out in the preceding paragraph, and for the sake of completeness, the scope of the doctrinal analysis may be broadened. In the opinion of L. PREVITI, *La decisione amministrativa robotica*, cit., p. 163, the software program should not be regarded as an administrative act, whether internal or general, but rather as a technical instrument available to the public administration in the exercise of its administrative powers. Some scholars argue that the variables and rules embedded in an algorithm reflect an internal organisational power, whereas others see them as a form of self-limitation on the exercise of administrative functions. In the first view, the algorithm would qualify as an internal act (A. USAI, *Le prospettive di automazione delle decisioni amministrative in un sistema di teleamministrazione*, in *Dir. inf.*, 1, 1993, p. 164) or as an instrumental act (A. MASUCCI *L'atto amministrativo informatico*, cit., p. 57), akin to a circular or an internal directive, while in the second it is considered capable of producing effects vis-à-vis third parties, either as a general act or as a regulatory measure. It has also been argued that the algorithm and, more precisely, the software that executes it, falls within the notion of an administrative document (on the different perspectives, R. CAVALLO PERIN, I. ALBERTI, *Atti e procedimenti amministrativi digitali*, cit., p. 139).

¹⁰¹ See in a more sceptical vein, within the framework laid down by Article 28 of the Italian Constitution, L. VIOLA, *L'intelligenza artificiale nel procedimento e nel processo amministrativo*, cit., p. 19 ff.

¹⁰² See G. GALLONE, *Riserva di umanità e funzioni amministrative*, cit., p. 165, and L. PREVITI, *Regulation issues of algorithmic administrative decisions*, cit., p. 39: «on the one hand if the electronically processed act must be considered to all intents and purposes as the expression of the willing of public authority, on the other hand the possibility of carrying out a verification (although a summary one) of the decision suggested by the computer program provides an opportunity to identify, with greater precision, the person actually responsible for any illegality of the administrative act». Cf. also G. CARULLO, *Decisione amministrativa e intelligenza artificiale*, cit., p. 431; M.C. CAVALLARO, *Imputazione di responsabilità delle decisioni automatizzate*, in *European Review of Digital Administration & Law*, I, 1-2, 2020, p. 71 ff.; S. CIVITARESE MATTEUCCI, *“Umano troppo umano”*, cit., p. 21; D.U. GALETTA, *Human-stupidity-in-the-loop? Riflessioni (di un giurista) sulle potenzialità e i rischi dell'Intelligenza Artificiale*, in *www.federalismi.it*, 5, 2023, xii.



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probabilistic reasoning – there is, in principle, nothing preventing the same objectives from being pursued in contexts involving discretionary powers.

The algorithm is characterised by an essentially conservative, or at most rationalising, approach to administrative choices, while leaving innovation to human intervention, that is, to the human capacity to depart, even radically, from prior choices with a prudence and creativity not inherent in machines, which remain derivative of human intelligence. Owing to its predictive nature, as has been observed, the algorithm may also generate discretionary outcomes that are logically consistent with previous human decisions¹⁰³; however, it cannot produce genuinely innovative interpretations, since discontinuity is a distinctive feature of human intelligence.

A similar approach, underlying judgment no. 2270/2019 of the Council of State¹⁰⁴, laid the groundwork for subsequent developments, culminating in another landmark decision, no. 8472/2019¹⁰⁵, which paved the way for the use of algorithms even in contexts involving discretionary powers.

On the basis of the latter judgment, the issue of the risks associated with such tools is not overcome by the rigid and mechanical application of the detailed procedural rules set out in Law no. 241 of 1990. The general law on administrative procedure, in fact, was enacted at a time when public administration had not yet been affected by the technological revolution.

In addressing the new challenges posed by digital transformation, as anticipated, one of the key requirements of legal protection is transparency, understood in terms of the principle that decisions must be reasoned and justified. This brings us to the core

¹⁰³ See R. CAVALLO PERIN, *Ragionando come se la digitalizzazione fosse data*, cit., p. 326.

¹⁰⁴ The facts, in broad terms, may be summarised as follows. Pursuant to the extraordinary national recruitment plan provided for by Law no. 107/2015, several teachers were assigned to subject classes and school levels in which they had never previously worked. Moreover, despite having expressed a preference for upper secondary education in their employment applications, they were instead allocated to lower secondary schools. Finally, all of them were posted to provinces far from their place of origin. All this resulted from a mechanism devoid of any human intervention, entirely automated, whose actual functioning was not disclosed.

¹⁰⁵ The value of this judgement is emphasised by M. TIMO, *Algoritmo e potere amministrativo*, in *Dir. econ.*, 1, 2020, p. 770. With particular reference to the principles developed in the case law of the domestic administrative courts governing the use of artificial intelligence in administrative proceedings, see also L. CASINI, *Lo stato (im)mortale. I pubblici poteri tra globalizzazione ed era digitale*, Mondadori, Milano, 2022, p. 63 ff.; D. MARONGIU, *Algoritmo e procedimento amministrativo: una ricostruzione*, in *Giur. it.*, 6, 2022, p. 1515; N. MUCIACCIA, *Algoritmi e procedimento decisionale: alcuni recenti arresti della giustizia amministrativa*, in *www.federalismi.it*, 10, 2020, p. 344; A. SIMONCINI, *Amministrazione digitale algoritmica*, cit., p. 8 ff.



principles of algorithmic legality¹⁰⁶, which the administrative court rightly placed at the stage of designing the digital instrument¹⁰⁷.

The first principle is that of knowability, according to which individuals have the right to be informed of the existence of automated decision-making processes affecting them and to receive meaningful information on the logic involved¹⁰⁸. In this sense, the principle of knowability is complemented by that of comprehensibility.

The second is the principle of the non-exclusivity of algorithmic decision-making. Where an automated decision produces legal effects concerning or significantly affecting an individual, that person has the right not to be subject to a decision based solely on automated processing, and must benefit from meaningful human involvement capable of reviewing, validating, or overturning the automated outcome¹⁰⁹.

Thirdly, the principle of non-discrimination in the use of algorithms requires appropriate mathematical and statistical procedures, together with adequate technical and organisational measures, to ensure that factors leading to data inaccuracies are corrected and that the risk of errors is minimised, also with a view to safeguarding the security of personal data.

In this context, as confirmed by administrative case law¹¹⁰, three elements emerge as minimum safeguards for any use of algorithms in the exercise of public power.

¹⁰⁶ With specific reference to this issue, G. BOTTO, *Decisione algoritmica, discrezionalità e sindacato del giudice amministrativo*, in *www.federalismi.it*, 17, 2024, p. 5 ff.; E. CARLONI, *I principi della legalità algoritmica. Le decisioni automatizzate di fronte al giudice amministrativo*, in *Dir. amm.*, 2, 2020, p. 273. See, furthermore, A. BARTOLINI, *Diritto amministrativo dell'innovazione tecnologica*, cit., p. 183 ff.

¹⁰⁷ Cf., on this point, R. FERRARA, *Il giudice amministrativo e gli algoritmi*, cit., p. 781. It is therefore at this crucial and defining stage, where the technical rule is concretely developed and put into operation, that administrative discretion reveals its persistent relevance and continuing significance, taking on the contemporary and compelling forms of technical discretion which, in the Author's view, increasingly appears to represent the fundamental and paradigmatic model of discretionary power *tout court* (p. 785). On the need to provide for participatory procedures at an earlier stage, so as to enable the underlying algorithmic logic to be scrutinised and contested, cf. also E. CARLONI, *I principi della legalità algoritmica*, cit., p. 302; D.U. GALETTA, *Algoritmi, procedimento amministrativo e garanzie*, cit., p. 512; P. OTRANTO, *Riflessioni in tema di decisione amministrativa, intelligenza artificiale e legalità*, cit., p. 203.

¹⁰⁸ The interest in access to information is also protected under Article 15 GDPR, which provides for the right to obtain information concerning the existence of automated decision-making processes.

¹⁰⁹ As also anticipated, under Article 22(1) GDPR, the data subject has the right not to be subject to a decision based solely on automated processing, except where such processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority (Article 23 GDPR). Recital 71 further provides that, even where permitted, such processing should be subject to appropriate safeguards, including specific information to the data subject and the right to obtain human intervention, to express one's point of view, to obtain an explanation of the decision reached after such assessment, and to challenge the decision.

¹¹⁰ See, *ex multis*, Council of State, Sec. VI, 4 February 2020, no. 881, which, following the earlier judgment no. 8472/2019, makes significant progress towards a broader acceptance of the use of automated procedures in cases involving discretionary administrative activity. Indeed, the Council of State acknowledges that discretion may well be exercised upstream of the implementation of the automated or "algorithmic" decision, at the very stage in which the algorithm is designed and defined. In the case law, among the most



First, full *ex ante* knowledge of the model used and the criteria applied (so-called transparency of algorithmic decision-making). This is necessary to verify that the criteria, assumptions, and outcomes of the automated procedure comply with the requirements and purposes established by law or by the public administration itself, and to ensure that its underlying rules and methods are clear and therefore subject to review.

The second aspect concerns the attribution of the decision to the competent administrative authority, which must be able to carry out the necessary verification of the logic and legality of the outcome produced by the algorithm, both in the interest of the administration itself and of the individuals affected by the administrative action.

Finally, it should be noted that the risks associated with such instruments are not overcome by the rigid and mechanical application of procedural rules. Rather, the fundamental requirements of protection arising from the use of algorithms remain the transparency, understood in the terms outlined above and closely linked to the principle of reasoning and justification of administrative decisions; the human oversight, with a necessary attribution of the decision, and the ensuing liabilities, to the administrative body vested with the relevant power; the adequate level of accuracy of A.I. systems, in particular where they are high-risk systems.

All this acquires particular significance in light of the European regulation on artificial intelligence¹¹¹, for at least two reasons.

Firstly, the AI Act is based on a classification of the level of risk posed by artificial intelligence systems, grading risks as minimal and limited¹¹², high and unacceptable¹¹³. Many administrative activities, with the exception of those falling within the excluded sectors pursuant to Article 2, fall within the category of “high-risk”, as can be inferred from Annex III of Regulation 2024/1689¹¹⁴. In such cases, public administrations must ensure compliance with the minimum safeguards set out in Section II of Chapter III of the Regulation and, more importantly for present purposes, with the requirements of transparency, human oversight, and accuracy of AI systems laid down in Articles 13, 14, and 15 of the AI Act¹¹⁵.

recent decisions, see Council of State, Sec. IV, 1 July 2026, no. 5250; Lazio Regional Administrative Court, Rome, Sec. I-ter, 1 July 2026, no. 11961.

¹¹¹ Cf. B. MARCHETTI, *Intelligenza artificiale, poteri pubblici e rule of law*, in F.G. SCOCA, M.P. CHITI, D.U. GALETTA (eds.), *Liber amicorum per Guido Greco*, Giappichelli, Torino, 2024, p. 529 ff.

¹¹² See S. FRANCIOSI, *AI Act e pubblica amministrazione*, in www.giustizia-insieme.it, 2024, which distinguishes, on the one hand, AI systems posing minimal or no risk, subject to reduced compliance obligations, and, on the other hand, systems primarily subject to specific transparency obligations, such as informing users.

¹¹³ The reference is to the “prohibited AI practices” under Article 5 of Regulation (EU) 2024/1689.

¹¹⁴ See already S. FOÀ, *Intelligenza artificiale e cultura della trasparenza amministrativa. Dalle “scatole nere” alla “casa di vetro”?*, in *Dir. amm.*, 3, 2023, p. 515; C. SILVANO, *Prospettive di regolazione della decisione amministrativa algoritmica: un'analisi comparata*, in *Riv. it. dir. pubbl. com.*, 2-3, 2022, p. 265.

¹¹⁵ Pursuant to Article 13, «high-risk AI systems shall be designed and developed in such a way as to ensure that their operation is sufficiently transparent to enable deployers to interpret a system’s output and use it



Secondly, the outcomes reached by Italian administrative jurisprudence, in many respects, represent an anticipation of principles and rules subsequently affirmed also at EU level. Whereas in other Member States, such as Germany and France, it was the legislature that, from the outset, regulated the conditions for the adoption of automated decisions by public administrations¹¹⁶, in Italy the administrative courts have played a central role in developing the legal framework governing the lawful use of algorithms through the elaboration of the principles outlined above.

5. Final remarks on the transition towards an algorithm-based model of administrative decision

The promotion of technological progress contributes to rendering the exercise of public power more objective and predictable. Rather than evading mechanisms of measurement and *ex post* evaluation, technological governance facilitates them, including in the context of judicial review.

appropriately»; to this end, they «shall be accompanied by instructions for use in an appropriate digital format or otherwise, including concise, complete, correct and clear information that is relevant, accessible and comprehensible to deployers». As regards human oversight, Article 14 seeks to prevent or minimise risks to health, safety, or fundamental rights and, to this end, users must at all times be enabled to properly understand and adequately monitor the functioning of the AI system, including, where appropriate, disregarding the output of high-risk AI systems. The framework is further supplemented by Article 15, concerning the accuracy, robustness, and cybersecurity of such systems. In this regard, it is provided that «the technical solutions to address AI-specific vulnerabilities shall include, where appropriate, measures to prevent, detect, respond to, resolve and control attacks aimed at manipulating the training dataset (data poisoning), or pre-trained components used in training (model poisoning), inputs designed to cause the AI model to make errors (adversarial examples or model evasion), confidentiality attacks or model flaws».

¹¹⁶ In Germany, pursuant to § 35a of the *Verwaltungsverfahrensgesetz* (VwVfG), an administrative act may be issued entirely through automated means, provided that such a procedure is authorised by law and does not entail the exercise of administrative discretion or evaluative judgment (cf. E. BUOSO, *Fully Automated Administrative Acts in the German Legal System*, in Erdal, 1/1-2, 2020, p. 113; J.P. SCHNEIDER, F. ENDERLEIN, *Automated Decision-Making Systems in German Administrative Law*, in CERIDAP, 1, 2023, p. 100). The French legislature – the reference is primarily to Loi n. 2016-1321 du 7 octobre 2016 pour une République numérique aimed at enhancing the transparency of algorithmic procedures (cf. L. CLUZEL-MÉTAYER, *La loi pour une République numérique: l'écosystème de la donnée saisi par le droit*, in AJDA, 2017, 6, p. 340; E. MOURIESSE, *L'opacité des algorithmes et la transparence administrative*, in RFDA, 1, 2019, p. 45) – has adopted a different approach, placing less emphasis on the nature of the administrative power exercised and greater emphasis on the procedural safeguards afforded to individuals affected by decisions adopted through algorithmic processing. In particular, the administration is required to inform the individual concerned whenever it intends to adopt a decision based on algorithmic data processing. Upon request, individuals are entitled to receive information regarding the technical rules governing the algorithm and its principal characteristics. Furthermore, any such decision must remain subject to meaningful human oversight, ensuring that a public official supervises the operation of the system and is capable of explaining its functioning in a clear and comprehensible manner. Cf., on these issues, M. VEALE, I. BRASS, *Administration by Algorithm? Public Management meets Public Sector Machine Learning*, in K. YEUNG, M. LODGE (eds.), *Algorithmic Regulation*, Oxford University Press, 2019, p. 121 ff.; H. PAULIAT, *La décision administrative et les algorithmes: une loyauté à consacrer*, in *Rev. dr. pub.*, 3, 2018, p. 641 ff.



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This aspect is of particular significance, as instability in decision-making remains one of the principal obstacles to contemporary development. Within this framework, the governance of decision-making processes ultimately remains subject to human oversight and is constrained by requirements of consistency and coherence. These requirements reflect the evolution of the technical rules governing the exercise of public power and, at the same time, shape the standards against which administrative action is reviewed by the courts.

Public authorities are required to comply with fundamental procedural safeguards which give rise to specific duties to provide reasons. This serves not only to prevent unacceptable forms of diminished accountability, but also to ensure that administrative outcomes are fully intelligible, that the choices made are capable of public justification, and that the balancing of competing interests undertaken at an earlier stage can be effectively implemented.

These developments must be understood within the broader process of the digital transformation of public administration. While digitalisation may, on the one hand, shield public authorities from undue political interference, even where this entails challenging established institutional arrangements, it may also generate systemic benefits by enhancing their capacity to adapt to and address the common challenges and opportunities arising from the ongoing digital, ecological, and social transitions.

There is a close relationship between technological innovation in the exercise of public power, on the one hand, and economic and infrastructural transformation and development, on the other. Institutional and bureaucratic reforms aimed at simplifying and expediting administrative processes constitute a valuable legacy that should be preserved and passed on to both present and future generations.

From this perspective, the adoption of a Regulation on artificial intelligence should be welcomed, as regulatory fragmentation undermines legal certainty and hampers the development of coherent policies in such a sensitive field.

Although the AI Act formally entered into force on 1 August 2024, it provides for a phased application regime with regard to the obligations applicable to high-risk AI systems. Pursuant to Article 6, read in conjunction with Annex III to Regulation (EU) 2024/1689, such systems are of particular relevance to the exercise of administrative powers; however, the corresponding obligations become generally applicable only as of 2 August 2026. Nevertheless, even before that date, the AI Act has served as an interpretative benchmark by virtue of its so-called vertical effect.

More specifically, reference is made to the case law of the Court of Justice, which, although developed primarily in relation to directives, is grounded in a line of reasoning that is equally applicable to regulations whose substantive provisions are subject to deferred application. The Court has consistently recognised that an EU legal act may produce limited anticipatory effects even before its provisions become fully operative,



thereby requiring national authorities, by virtue of the general duty of standstill, to refrain from adopting interpretations or administrative practices liable to undermine the objectives pursued by the EU legislature¹¹⁷.

The need to identify the applicable legal and evaluative parameters before a decision is made is essential to ensuring legal certainty. From this perspective, as previously observed, the protection of legitimate expectations and the duty of the public administration to act in good faith play a crucial role in understanding the rationale underlying algorithmic decision-making. Alongside the duty to give reasons, procedural participation and, more generally, the aforementioned principles of algorithmic legality, these safeguards contribute to ensuring the lawfulness of administrative action carried out within an innovative decision-making framework shaped by the ongoing processes of digital transformation.

The establishment of rules and reference values to guide future decisions enables public authorities to strengthen the guarantees of impartiality and proportionality underpinning their choices, while enhancing the predictability of administrative action. Against this backdrop, reconceptualising transparency as access to all the elements contributing to the development of a digital decision, together with the principles of human oversight and the prohibition of algorithmic discrimination, strengthens the democratic character of the administrative legal order. These safeguards also facilitate more efficient planning, with significant cost savings, while enhancing the security and integrity of public decision-making.

It should be noted that the predetermination rules referred to above, like those contained in general administrative acts, are neither abstract nor expressions of general principles. The underlying choices made by public authorities in order to predetermine their own conduct, in fact, constitute forms of anticipatory exercise of discretion capable of generating a requirement of consistency for subsequent action.

The competent authority retains the power to adopt the final decision; however, the prior determination of certain rules, including those governing the operation of each algorithm, inevitably shapes the exercise of that power. Algorithms, therefore, far from depriving public administrations of their autonomous sphere of assessment, contribute to the

¹¹⁷ The Court has held that, during the period between the adoption of an EU legal act and its entry into force or application, Member States are under a duty not to take measures liable seriously to compromise the attainment of the objective pursued by that act (Court of Justice, 18 December 1997, Case C-129/96, *Inter-Environnement Wallonie*). Likewise, the Court has made clear that, so far as possible, national courts must interpret domestic law in a manner consistent with the principles emerging from EU law even before the new provisions become fully applicable (Court of Justice, 4 July 2006, Case C-212/04, *Adeneler*). More generally, the duty of standstill requires national authorities to refrain from adopting measures or interpretations that would undermine the objectives pursued by EU legislation (cf. Court of Justice, 8 May 2003, Case C-14/02, *ATRAL*; 10 November 2005, Case C-316/04, *Milieudefederatie*; 26 May 2011, Joined Cases C-165/09 to C-167/09, *Stichting Natuur en Milieu*; 11 September 2012, Case C-43/10, *Nomarchiaki Aftodioikisi Aitolokarnanias*).



technical structuring of part of their activity, with significant implications for both administrative procedure and judicial review. The final decision should, in this respect, constitute a predictable and coherent synthesis of the choices made at earlier stages of the process.

Administrative rationality thus becomes assessable in light of the alternatives selected and their relationship to the outcomes pursued. This, in turn, explains the need to ensure transparency or, more precisely, the knowability of the choices underpinning the process and of the data on which they are based. Hence the importance of guaranteeing informed participation in automated procedures, where discretion may be exercised at an earlier stage than the application of the automated system, namely at the very stage of algorithm design. The emphasis placed by legal scholarship on transparency is, moreover, fully justified only insofar as the right to know is coupled with the right to participate in the procedure and the legitimate expectations of those subject to administrative action are effectively protected.

Within this framework, judicial review becomes more effective, particularly where it extends to the reasonableness of the underlying choices. The inability to understand the processes through which a specific outcome has been reached by means of an algorithm – for instance, the allocation of available positions in a competitive selection procedure – constitutes, in itself, a defect capable of invalidating the entire procedure. A departure from the underlying rule could be justified only where it is necessary to correct a system anomaly and thereby achieve a result that better reflects the balance of interests underlying the general administrative act.

The use of algorithms and, more broadly, digital technologies is driven not only by the objective of simplifying action but also by the pursuit of good administration, understood as the ability to combine greater procedural efficiency with higher-quality decision-making. From this perspective, particular significance attaches to the assessments and data supplied by the public administration to the developers of the algorithm. These provide the basis for the choices made at the upstream stage and must ultimately be scrutinised by the competent authorities before the final decision is adopted.

Against this background, it is unsurprising that the courts have identified the design stage of the algorithmic model as a critical focus of judicial review. As argued above, the technical formula embodied in the algorithm is not merely a computational device but assumes the form and normative function of a legal rule.

This does not, however, mean that applicants are required to challenge immediately the decision to employ an algorithmic system. Although the requirement of consistency inherent in algorithmic decision-making constrains subsequent administrative action, its adverse effects become legally relevant only when the underlying choices are translated into a concrete measure, consistently with the principles of transparency and gradual implementation. In other words, it is the unlawfulness of the outcome that reveals defects



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affecting the legality of the measure and that, within the limits of the applicant's pleadings, may justify judicial review of the substantive merits of the claim.

An approach grounded in standards of verifiability embedded in the administration's underlying choices safeguards the justiciability of algorithmic processes while also reducing the potential for litigation. At the same time, it complements broader reforms aimed at streamlining public decision-making, thereby contributing to the effectiveness and resilience of the administrative system. This is particularly significant in a regulatory environment in which the development and deployment of artificial intelligence-enabled digital tools by public authorities are increasingly regarded as essential to the ongoing process of digital transformation.