

Gianluigi Spagnuolo

# Artificial intelligence and the end of administrative proceedings

(doi: 10.53227/113720)

Rivista di Digital Politics (ISSN 2785-0072)

Fascicolo 1, gennaio-aprile 2024

**Ente di afferenza:**

()

Copyright © by Società editrice il Mulino, Bologna. Tutti i diritti sono riservati.

Per altre informazioni si veda <https://www.rivisteweb.it>

**Licenza d'uso**

Questo articolo è reso disponibile con licenza CC BY NC ND. Per altre informazioni si veda <https://www.rivisteweb.it/>

Gianluigi Spagnuolo

# Artificial intelligence and the end of administrative proceedings

## ARTIFICIAL INTELLIGENCE AND THE END OF ADMINISTRATIVE PROCEEDINGS

The progressive evolution of the use of It in the exercise of administrative power has invested the public administration and the public decision-making process, redesigning its form and substance, influencing organisation and procedures. The automation of administrative proceedings not only allows to redesign internal processes to increase efficiency and improve organizational performance, but also changes the very nature of the proceeding: cancelling the traditional sequence of acts, flattening all the phases, rendered contextual, thus determining the end of the administrative proceeding as known up to now. The use of Artificial intelligence (Ai), which is often seen as a panacea to the problems of the Pa, must not confuse the neutrality of the instrument (enough to credit it) with the neutrality of the method. Indeed, the Ai has itself become the subject of decisions, in administrative proceedings, as in the legal system itself. It is therefore crucial to analyse the design of algorithms, with regard to the opacity of design and transparency on the values they incorporate, in particular with regard to possible unequal treatment resulting from Machine learning (MI). The analysis of concrete cases highlights the possible repositioning of the different actors involved in the automated administrative proceeding, compared to the redesign of public services and participation in decision-making processes.

**KEYWORDS** *Artificial Intelligence, Large Language Models, Machine Learning, Automated Proceeding, Administrative Simplification.*

## 1. The computerisation of the Public administration

The progressive evolution of the use of It in the exercise of administrative power has invested the Public administration (Pa) and the public decision-making process, redesigning its form and substance, influencing organisation and procedures.

The Pa is today in the phase of revolution 4.0, characterised by a high degree of automation and interconnection, which has an important impact

Gianluigi Spagnuolo, University Luiss Guido Carli – Viale Pola 12, 00198 Rome, Italy, email: gianluigi.s@tiscali.it, orcid: 0000-0003-2450-1099.

on the human being and his way of being (Biuoso 2018), on his reference environment (Schwab *et al.* 2016), and determines an important transformation of the same tools and operating modes used.

The computerised administrative proceeding is about to become the ordinary procedure for issuing administrative measures because it is functional to the implementation of the efficiency and cost-effectiveness criteria. Its tools are now the primary means of implementing administrative action (Rolli *et al.* 2021)<sup>1</sup>.

The change has an impact on the activities of the Pa, redefining its logic and operating modes «at a pace and scope never seen before in history» (Agarwal 2018, 917), in particular with respect to:

- the administrative organisation as such;
- the administrative proceeding in its structure and legal framework;
- the system of imputability of administrative decisions (Galetta *et al.* 2019);
- the balance of relations between Pa and administrative justice (Patróni Griffi 2018).

Moreover, a lot of emphasis is placed on the computerisation of the Pa, as if it were enough to use the It tool to solve ills and delays accumulated over decades, as well as to dissolve the dense bureaucratic tangle (Sunstein 2021) made of rules and administrative structures that prevent effective public action (Musella 2022; Acquati *et al.* 2012; Cammelli 2014; Natalini *et al.* 2022).

The digitalization process requires a broad redefinition of management practices, organizational structures, cultures and job roles. From an organizational point of view, the Pa has moved from the logic of slow and gradual innovation – when not of open conservative resistance – to the paradigm shift, visible in three important areas of its change and accompanied by three digitalization vectors (Musella 2021):

- the reorganisation of administrative processes, through the use of technological tools;
- the use of applications as a driving force behind the integration of public services and the collection and processing of information, allowing a wider digital participation of citizens;
- the importance of digital data for the governance of communities, with the development of algorithmic administration.

Technologies therefore go from communication to organizational design (Musella 2022), considering how the interaction between regulatory application and technology «entails that both organisations and technology are

<sup>1</sup> The author notes as the use of digital has prevented the country's generalised paralysis during the most acute phase of the pandemic, allowing the Pa to continue to satisfy the public interest.

constituted through action on the one hand and constitute action on the other hand» (Lorenz *et al.* 2022, 2).

## 2. The end of the administrative proceeding

The automation of administrative proceedings not only allows to redesign internal processes to increase efficiency and improve organizational performance, but also changes the very nature of the proceeding: cancelling the traditional sequence of acts, flattening all the phases, rendered contextual, thus determining the end of the administrative proceeding as known up to now.

The digitalization of the Italian Pa is in the context of the administrative reforms that have taken place since the Nineties, which include, in the first «reform season» (Natalini 2006), inspired by the New public management: rules on administrative proceeding (Law no. 241/1990), reform of local authorities (Law 142/1990, Legislative decree no. 267/2000), reform of the National health service (Legislative decree no. 502/1992 and 517/1993), privatisation of public employment (Legislative decree no. 29/1993 and 165/2001), reform of the Pa and administrative simplification (so-called «Bassanini laws»: no. 59/1997, 127/1997, 191/1998, 50/1999); in subsequent more limited reform policies (so-called «Madia decrees»: certified notice of start of business (Scia) and standardised and unified forms (Legislative decree no. 126/2016), service conference (Legislative decree no. 127/2016), concentration of authorization regimes (Legislative decree no. 222/2016); in the most recent context reform agenda: Next generation eu (European council, 21 July 2020) and the National recovery and resilience plan (Pnnr, 5 May 2021) on: Pa, Justice, simplification of legislation, promotion of competition. There are also specific rules on digitalization, which has become the cornerstone of every attempt to reform the Pa in recent years: Digital administration code (*Cad*, Legislative decree no. 82/2005) and related guidelines issued by Agid; Regulation (Eu) 2016/679 (Gdpr) and proposal of the Artificial intelligence act (Ai Act 2023).

Automation intervenes in the various phases of the administrative proceeding and concerns (Galetta *et al.* 2023b):

- the start of the procedure, through the use of guided procedures (*e.g.* application form);
- document acquisition, through the interoperability of Pa information systems and databases (such as the National digital data platform, Pdnd) and the application of the once-only principle;
- the processing of data, with reference to the principles of the General data protection regulation (Gdpr);

- the investigation phase, characterised by informality, wide power of initiative, application of the inquisitory principle, in which technologies make it possible to achieve greater completeness and adequacy (Alberti 2023);
- decision-making processes, with a varying level of automation intensity, starting with activities which, while falling within the notion of automation within the administrative proceeding, do not represent an algorithmic decision in the strict sense (Galetta 2023a, 124).

If the administrative proceeding consists of a series of acts and activities functional to the adoption of the administrative measure representing the final act of the sequence, the automated proceeding shall flatten it until it is annulled, since all phases take place at the same time (Spagnuolo 2022).

An example is the automated proceeding for the start-up of productive activities provided for in the Regulation on the One stop shop for productive activities (Sportello unico attività produttive, Suap, art. 5, Decree president of the republic no. 160/2010) that allows, through the use of digital platforms, the submission of the application, providing for the automation of all phases and front-office processes: transmission and receipt of the application, formal inspection of documentation, transmission to the competent bodies and the payment system, adoption of the final decision. The procedure, based on the use of the unified forms provided for in Legislative decree no. 222/2016, provides for the verification, using computerised methods, of the formal completeness of the alert and its annexes, with the automatic and immediate issue of the receipt, drawn up on the basis of the information provided by the applicant, which constitutes the authorization to initiate, with immediate effect, the action or activity requested.

This process requires, in addition to the simplification of proceeding and procedures and digitalization, the contribution of instruments of administrative law:

- deregulation (from authorization to Scia, to notice, to free activity (art. 19, Law no. 241/1990, art. 15, Decree-law no. 76/2020);
- accession to general authorizations (Avg, Legislative decree no. 152/2006), single environmental permit (Aua, Decree president of the republic no. 59/2013);
- administrative simplification.
- Empirical analysis shows that there is a trade-off between simplification and automation (Pagano 2021, 88).

An example, based on the use of blockchain technology, concerns the trial «nidi gratis» carried out in 2019 by the Municipality of Cinisello Balsamo. A mobile and desktop app has allowed interested parties to automatically

verify that they meet the requirements to cancel or reduce crèche fees, data then shared and certified via blockchain between different Pa securely, without centralising information systems or affecting the privacy of the citizen. The average time to submit instances was only 7'40", while 90% of the requirements were automatically verified by the system and placed on the blockchain<sup>2</sup>.

A further example – still *in nuce* – concerns the Code of public contracts (Legislative decree no. 36/2023), which introduces into Italian legal system the rule that allows the use of automated procedures in the evaluation of offers, also using solutions such as Ai and blockchain (Gaetano 2023)<sup>3</sup>.

As is also apparent from the examples, the combined use of technologies and administrative law instruments radically changes the meaning of the administrative proceeding, from different points of view. First of all, deregulation tends to reduce the number of procedures to be activated. The introduction of technologies then not only simplifies the procedures for submitting the application (*e.g.* unified forms) or acquisition of documentation (*e.g.* interoperability of databases), thus reducing the number of steps and the duration of the procedure, but, at least in the simplest cases (contextual notices to the practice, «self-controlled» with respect to the right to issue the licence), exhausts the proceeding essentially in the application itself, thus eliminating the same need to activate it.

In the digital state, the role of administrative law has therefore become invisible, reducing itself to a verification of risk assessments and the fulfilment of the eligibility criteria for benefits (Ranchordas 2024). Invisibility that inevitably leads to reflection on the end of the administrative proceeding.

<sup>2</sup> Source: official website Lombardy Region: <https://www.regione.lombardia.it/wps/portal/istituzionale/HP/lombardia-notizie/DettaglioNews/2019/09-settembre/23-29/nidi-gratis-con-blockchain-risultati-record-a-cinisello-balsamo> Consulted on 17 January 2024.

<sup>3</sup> The author notes that the law speaks of «activity» and not «proceedings» in the absence of a rule that legitimises full decision-making through Ai in the Administrative proceeding act (Law no. 241/1990).

### 3. A possible automation model for the Public administration

The use of Ai<sup>4</sup>, Ml chatbots<sup>5</sup>, Large language model (Llm) and blockchain<sup>6</sup> outlines an innovative model of proceedings automation that, overcoming the simple online transposition of paper procedures, easily provides (*e.g.* through the use of natural language) answers to specific requests.

Compared to the request (input) that activates the procedure, Ai and blockchain systems allow to manage in a dynamic way the variance, and direct the interested party to the correct procedure to be activated, moving from an approach based on the mere compilation of forms to one based on data (so-called data driven administration), using user profiling to simplify procedures, the interoperability of the Pa to optimise them, with the aim of reducing the response time of the Administration to users (Spagnuolo 2022).

This implies, on the one hand, an important simplification of proceedings and procedures; on the other hand, a strong investment in databases capable of integrating into Ai systems, in order to provide immediate answers to complex questions of citizens (Regonini 2018, 17).

From this point of view, the development of Llms, trained with huge amounts of data that feed the so-called Ai generative, it represents a significant turning point, allowing to decipher the complexity of the language, allowing algorithms to understand the context of a request and infer its intent to independently create relevant content (Accenture 2023).

<sup>4</sup> The Organisation for economic co-operation and development (Oecd) has recently (november 2023) developed a new definition of Ai, reflecting developments over the past five years: «An Ai system is a machine-based system that, by explicit or implicit objectives, deduces, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can affect physical or virtual environments. Ai's different systems vary in their levels of autonomy and adaptability after implementation». Historically, Ai has been defined in reference to the relationship with human intelligence. *Ex multis*, Somalvico (1992): «Discipline, belonging to computer science, which studies the theoretical foundations, methodologies and techniques that allow to design hardware systems and systems of software programs capable of providing the electronic computer with performance that, to a common observer, would seem to be of exclusive relevance of human intelligence».

<sup>5</sup> Chat bots, chatbots or chatterbots are software designed to simulate a conversation with a human being. Classic example: the virtual assistant.

<sup>6</sup> Blockchain, expression composed of «block» and «chain» is usually defined as a technology based on a chain of blocks that record and manage accounting operations accessible only to the users of each node, to ensure traceability and allows transactions to be carried out without intermediary authorities. Agrifoglio *et al.* (2021) focuses on the expected benefits and organisational implications of the blockchain. For applications of blockchain technology in the public sector see Wiese (2021).

Llm can generate articulated and comprehensible textual outputs that closely resemble human-generated decisions, allowing a deeper understanding of decision-making (Carullo 2023).

Compared to the conclusion of the proceeding (output), the algorithm can be used as a prediction of the decision that will be taken by the individuals, or as a proposal for a decision to be submitted for consultation that will still be concluded by a necessary human intermediation (Cavallo Perin 2023).

The automated proceeding can also result in the formation of an automatic authorization, which replaces the last phase of the administrative proceeding.

It should be noted that the training set of cases, with the related decisions (input), used to define the predictive model (output), replaces – enhancing it – the activity of researching datasets that the human official carries out today in an artisanal way, with all the risks of bias, for the management of procedures: acts; laws; best practice; forms; standard procedures.

«The use of algorithms in Pa» (Cavallo Perin 2023) is now legally legitimised because «compliant with the efficiency and cost-effectiveness of administrative action» (Consiglio di stato 2019). How can the general possibility of exploiting artificial intelligence in the formulation of decisions of the Pa (Consiglio di stato 2020, 5.1) now be acquired, with attention to particular aspects, such as the legal nature of software as an administrative act (of internal, general or regulatory relevance); the general substitutability of human imputation; the opacity of the logic process and the biases of automated decisions<sup>7</sup> (Pasquale 2015; Cavallo Perin 2023).

#### 4. Automation of administrative proceedings: from binded to discretionary activities

The use of predictive analysis based on ML algorithms promises (and in part already allows) to extend the automation of the processes of the Pa from the binded activities to the discretionary ones, further expanding the scope of the technologies, with repercussions on the organisation.

First, you need to classify automation, or algorithmic decision (Galetta 2023a, 125), typically divided into:

- full, in which algorithms automatically link data and information to documents. The output is the production of the final document,

<sup>7</sup> The problem of the «black box» of algorithms and the possible discriminatory effects of algorithmic decisions deals with the literature on Critical algorithm studies (*e.g.*: <https://socialmediacollective.org/reading-lists/critical-algorithm-studies/>).



which expresses the administrative decision, generated without human intervention;

- with reduced human intervention, in which the human official interacts with an automated system that processes information and may propose actions or draft conclusive documents: the final decision, however, is generated by human intervention<sup>8</sup>;
- automation combined with predictive activity. ML is an AI technique that consists of one or more algorithms that use a large amount of data to establish models that translate into predictions, based on some statistical criterion. Applied to the public sector, it is very useful in the presence of relatively stable jurisprudence or administrative activity. It does not necessarily imply an automatic decision of the first type and can be used as a support tool at the preliminary phase of the proceedings.

Pa have already started using AI systems for some years, especially in relation to the so-called binded administrative activity: that is to say, without discretion in the administrative decision, *e.g.*: payment of contributions on the basis of pre-established parameters; application of automated administrative penalties; verification of infringements through automatic detection systems and related automatic calculation of the amount due. The use of algorithms has been tested in important public sector (Orsoni *et al.* 2019, 600-601): public contracts; automated exclusion measures in award procedures; management of State property; school organisation.

The story of the so-called «good school algorithm» provided the starting point for a first classification of the phenomenon through the elaboration of important general principles of reference in this area,<sup>9</sup> producing a lively doctrinal debate, which converges on the observation that «the robotic administrative decision is directed on a path that can reasonably be taken in many areas of daily life» (Patroni Griffi 2018).

Although the established case-law does not yet provide for administrative discretion in the «system of algorithms» (Marchianò 2020, 253), considering also that at the present time automation mainly concerns procedural steps and/or the investigation phase of the procedure, the development of technologies tends in any case towards the total automation of administrative activity.

It is evidently on the part of administrative justice a «under-assessment of the not merely operational character of complex algorithms» (Carloni 2020, 286).

<sup>8</sup> For an in-depth look at human intervention in the context of (semi)automated administrative decision-making (Aadm), most recently: Haitsma *et al.* (2024).

<sup>9</sup> In addition to Galetta (2020); Dalfino (2020).

The last conclusion of the case-law (Consiglio di stato 2020) extends the use of the algorithm also to procedures characterised by discretion, exceeding the limit of the binded activity, starting from the assumption that in both cases the administration must pursue the public interest, since a distinction between two activities characterised by the same purpose is no longer sustainable.

The algorithm easily adapts to the proceeding relating to binded activity, which does not provide for administrative discretion and, since it is based on at least apparently objective criteria, can usefully impact also on activities subject to discretion, reducing it.

The use of an It procedure leading directly to the final decision must not be stigmatised, but rather, in principle, encouraged, leading to the exclusion of interference due to negligence (or worse intentional) of the official (human) and the consequent greater guarantee of impartiality of the automated decision (Consiglio di stato 2019b, 9.2).

If the deregulation, as well as the technology that self-checks the requirements even before the application is submitted, decreases the number of administrative proceedings, if the automation of processes reduces the time to conclude, the application of the algorithm replaces – in whole or in part – all phases, in particular the investigation and the decision-making phase, determining in perspective the end of the administrative proceeding.

## 5. Artificial intelligence from medium to subject of decision

The use of Ai, which is often seen as a panacea to the problems of the Pa, must not confuse the neutrality of the instrument (enough to credit it) with the neutrality of the method (Toffalori 2015, 7). Indeed, the Ai has itself become the subject of decisions, in administrative proceedings, as in the legal system itself. It is therefore crucial to analyse the design of algorithms, with regard to the opacity of design and transparency on the values they incorporate, in particular with regard to possible unequal treatment resulting from ML.

In particular, we envisage the development of an algorithmic administration, which takes advantage of the opportunities offered by machines for the elaboration of deductive and forecast models for the exercise of public authority (Simoncini 2020).

The same notions of subject and decision of the Pa know such a rethink that it affects the entire order structure of democratic states. The promise of the recovery of bureaucratic efficiency is accompanied by pitfalls that concern the sovereignty of the citizen in the new digital environment (Musella 2021, 97).

Algorithms exercise a discreet yet powerful charm: they save work, time and, above all, seem to lift from the weight and the risk of having to motivate and respond to those motivations (Simoncini 2020).

It has been hypothesised (Musella 2021, 104) a scenario in which the administration not only governs through data, but risks being governed by it. «Algorithmic governance» could in fact create an opaque regulatory power if not hidden for those who do not have access to the algorithm or are unable to interpret it (Auby 2019; Shoemaker 2020), with the risk of taking technological decisions without understanding the implications for the governance of the administrative state (Barth and Arnold 1999, 349; Reis *et al.* 2019), ending up as an invisible administration (Civitarese Matteucci *et al.* 2016), in which discretion is not eliminated, but ends up obscuring it (Jorna *et al.* 2007).

Cyberspace<sup>10</sup>, moreover, requires a new understanding of the functioning of regulation, beyond the norms. It requires recognition of a new regulator, the «code» of how the software and hardware that make cyberspace what it is, regulate it as it is. This code is the «law» of cyberspace, or rather, «code is law» (Lessig 2006).

Another aspect to consider is the bias of automated decisions. The ability of technological systems to formulate probabilistic hypotheses on the basis of large amounts of data from similar precedents, while on the one hand can constitute a qualitative leap also in the field of jurisprudential research, moving into the field of predictive justice, on the other can fuel discrimination and prejudice in decisions (Carlino 2023). In fact, ML can cause unequal treatment or discriminatory effects against natural persons on the basis of racial or ethnic origin, political opinions, religion or belief, genetic status, health status, sexual orientation, whether the dataset is entered by a human official (even involuntary prejudice), or are automatically extrapolated from the network (injury from the sources, *e.g.* lack of documentation by chronology, geographical source, etc.).

The algorithmic administration, to reduce the risk of bias in decisions, can refer to some general principles developed over time by administrative jurisprudence to which to comply: knowability of the algorithm; non-exclusiveness of the algorithmic decision; no algorithmic discrimination. These principles constitute the pillars of the so-called algorithmic legality, acting as conditions of legitimacy for the automated decisions adopted by Pa.

<sup>10</sup> The term «cyberspace» has spread as a synonym for the Internet. For a complete definition please refer to the entry «cyberspazio» of the Enciclopedia Treccani, 2012, [https://www.treccani.it/enciclopedia/cyberspazio\\_%28Lessico-del-XXI-Secolo%29/](https://www.treccani.it/enciclopedia/cyberspazio_%28Lessico-del-XXI-Secolo%29/) (last accessed on 17 January 2024).

Last but not least, it is a theme particularly present in the Italian Pa: the application of the once-only principle, that public authorities must not require the person concerned to obtain information and documents that Pa already has. If Ai and blockchain can allow for better interconnection and interoperability between databases (*e.g.* databases of national interest such as Pdnd) and the simplification of identity verification and attributes processes (qualifications, certifications, roles) of citizens or enterprises registered on a blockchain, the presence within the information systems of incorrect or outdated data can lead to an exponential increase in errors, which thanks to the interoperability of the systems will transfer to all other databases. This is, among other things, one of the reasons for the lack of propensity of administrations – concerned about the consequent responsibilities – in making their own databases available to other Pa.

The three-year plan for information technology in Italian Pa provides in this regard that services are interoperable by design so that they can operate in an integrated and seamless mode throughout the single market by exposing the appropriate application programming interfaces (Api) and that public data must be made available to citizens and enterprises in an open and interoperable form.

## 6. Algorithm design and redesign of public services

Finally, the analysis of concrete cases highlights the possible repositioning of the different actors involved in the automated administrative proceeding, compared to the redesign of public services and participation in decision-making processes: citizens and enterprises; intermediaries, but also stakeholders; digital platforms; Pa; control and regulatory authority.

The computerisation process is revolutionising the administration, in authoritative activity, in the production of goods and services, in the relationship with citizens through greater efficiency, effectiveness and quality of services, responding to the demand for less bureaucracy, greater transparency, participation, and assuming that – potentially – all transactions are carried out digitally (Constantino 2015). The end of the administrative proceeding also affects the same functional boundaries as the Pa, in terms of competence and authorization.

As seen, digitalization affects not only the process, but also the redesign of services. The new digital tools promise to reorganise administrative activities and reconnect the thread of relations with a citizen-user who seems increasingly dissatisfied. The use of vast databases strengthens public intervention by

ensuring information that is previously unavailable, often linked to the digital traces that citizens leave on the web (Musella 2021).

The Pa manages and provides a large number of services to citizens and enterprises, in analogue or digital form. The new possibilities offered by digital have led the administrations that provide services to have to review the way in which they build and manage the relationship with their citizens (Docs Italia 2023)<sup>11</sup>.

We know how service design analyses, organises and designs the use of a service (front-end) and its delivery (back-end), designing the relationships between the different actors or stakeholders, and the interaction of users with both physical and digital channels of use, trying to improve the characteristics of a service, orienting functionalities, processes and components around the actual needs of users (user-centered approach), responding to quality standards, usability, accessibility and security.

The service design focuses on the experience regarding the interaction between the user and the digital touchpoint, which offers citizens the opportunity to take advantage of multiple channels of contact with administrations in a fluid and orchestrated way, extending the time of use and availability of the service, reducing queues in offices and public spending.

The digital transformation of Pa and services is an integrated process aimed at the construction of «digital administrative ecosystems», simplified, transparent, open, participated, digitalized public organisations, with quality services provided on the network (Law no. 241/1990, Legislative decree no. 33/2013, *Cad*, Agid guidelines) (Limone 2023).

The digital transition is the process of transitioning from public organisational systems structured on administrative activities and processes (analogue or mixed, hierarchical, vertical) to natively digital administrations that form, manage, store data in «exclusively» digital and legally valid mode, creating new organizational models of public administrations and services through a process of simplification preliminary to the process of reorganisation and digitalization (art. 15 *Cad*, basic principles of the Pnrr).

Experience in recent years also shows that the greatest drive for change stems not from the redesign of individual administrative services, but from transversal lines of innovation, such as systems to increase digital identity, interoperability between the Pa, citizens' single access to public services, the remotization of online activity, unified systems for online payments at the Pa,

<sup>11</sup> Prifti *et al.* (2024), in noting the absence of analysis on the subject, conducts a systematic review of regulation by design in the context of digital technologies, distinguishing three types of regulatory practices: compliance by design, optimisation by design, creation of value from design.

which can go beyond the logic of increasing citizens' participation in specific innovations of policies (D'Ancona and Provenzano 2020; Barmann 2021; Borriello 2023).

For citizens and enterprises, but also intermediaries and stakeholders, the relationship with the Pa evolves towards a greater balance and a more pervasive involvement both in participation in decision-making processes and in administrative proceeding.

In the literature, the idea has been put forward that the experimental phase of the use of the algorithm can be characterised by a proposal for a decision to be contradictory among the participants in the proceedings, informing them of the progressive development and composition of the It folder (Cavallo Perin *et al.* 2020), as well as providing access to the dataset for training, source code and individual administrative backgrounds to increase transparency and accountability, so that stakeholders can assess the validity and reliability of decisions assisted by the Ai, promoting trust in the decision-making process (Carullo 2023). Or, predict the use of the so-called sandbox.<sup>12</sup>

The digital platforms, the big tech, boast currently overpower. These are few private subjects, larger than many governments, who produce technological applications of strategic importance in almost all areas of social life. The antitrust discipline itself is no longer sufficient to control its enormous economic power, which makes it easy to absorb important sanctions, to which social and political power is added. These digital private powers often allow the violation of privacy, the spread of fake news, the manipulation of public opinion, the distortion of the political process, the polarisation of public debate (Torchia 2023b, 2023c).

From this point of view, we need an in-depth reflection on the role of the State with regard to the substantive and structural values at stake with regard to the presence of powers without control and the need to regulate them.

The supervisory and regulatory authorities themselves must review their own mission. A key role will be played by the National agency for supervision on Ai provided for by the Artificial intelligence act, a role that could be entrusted to the Agenzia per l'Italia digitale, which already has among its tasks the realisation of the objectives of the Italian digital agenda, the promotion of digital innovation in the country and the use of digital technologies in the organisation of Public administration and in the relationship between Pa, citizens and enterprises. The governance of the system also includes the coordination

<sup>12</sup> The regulatory sandbox, planned in Italy with the Dmef 100/2021, is a controlled environment where intermediaries and fintech operators can test technologically innovative products and services in dialogue with supervisory authorities. On the sandbox, finally Bagni (2024).

committee for the updating of strategies on the use of Ai, appointed by the undersecretary for technological innovation and digitalization.

An important role is played by the three-year plan for information technology in Pa, whose strategy is to: fostering the development of a digital society, where services put citizens and enterprises at the centre, through the digitalization of the Public administration, country's development engine; promoting sustainable, ethical and inclusive development, through innovation and digitalization at the service of people, communities and territories, while respecting environmental sustainability; contribute to the diffusion of new digital technologies in the Italian production fabric, encouraging standardisation, innovation and experimentation in public services.

For the director of Agid, Mario Nobile, in an interview with *Wired* on 14 July 2023: «Plans to make Agid the future national artificial intelligence agency», it is important to provide strategies to the Pa, avoiding the purchase of technologies without knowing them, understanding how data is used, strengthening skills, pushing the use of open and decentralised systems instead of closed and centralised ones. In particular, compared to artificial intelligence, we need clarity on how foundation models are trained and how public data is used to train any algorithms, avoid technological lock-ins or lose control over the use of information (Zorloni 2023).

## 7. Conclusion

The use of Ai in the Pa changes both the administrative proceeding and the role and organisation of the Pa. Automation tends to be complete and widens towards all activities, binded but also discretionary, and leads to the end of the administrative proceeding.

Noting the existence of a trade-off between administrative simplification and automation, a very recent conference on: «Legislative simplification between present and future – The challenges of Ai and the effects on the growth of the country»<sup>13</sup> has put the theme of Ai's support for regulatory simplification.

Moreover, despite recent advances in Ai and the development of Llm and Chatbot, to be analysed in perspective, these instruments also have obvious limitations, such as fragility, unreliability, occasional inability to make elemen-

<sup>13</sup> Held in Rome, Italy, on 29 November 2023, organised by the Minister for institutional reform and legislative simplification, <https://www.riformeistituzionali.gov.it/it/comunicazione/notizie/evento-la-semplificazione-normativa-tra-presente-e-futuro/> (last accessed on 17 January 2024).

tary logical inferences. They can process texts often in a way that is indistinguishable from human output, while lacking any intelligence, understanding or cognitive ability. They actually represent a decoupling between agency and intelligence. Although extremely powerful and potentially very useful, they should not be invoked for complex reasoning or crucial information, but could be used to gain a deeper understanding of the content and context of a text, rather than as a substitute for human input. As has been authoritatively noted «the best author is neither an Llm nor a human being, but a human being using an Llm proficiently and insightfully» (Floridi 2023).

AI as an instrument has itself become the subject of decisions, in administrative proceedings, as in the legal system itself, while the algorithmic administration represents a risk of prejudice in decisions.

In addition, the repositioning of all subjects involved, with respect to the redesign of public services and participation in decision-making processes, has an impact on the overall governance of the system, but also on the legal system itself and on democracy.

An important reflection, combining digital constitutionalism with administrative law, concerns the invisible citizen in the digital state (Ranchordas 2024). Administrative law also becomes invisible: first, with digitalization, the government has become invisible to citizens due to the gradual disappearance of physical counters. Second, the public sector no longer sees citizens as individuals with rights, perceiving them instead as data points to be processed through risk assessments and standardised methods for fraud prevention and law enforcement, leading to growing distrust of the government. In other words: «when you do not see administrative law, administrative law may not see you either for who you are beyond the collected and processed data: a citizen with rights and duties.» (Ranchordas 2024).

It is therefore necessary to question the role of the State in relation to the «values» at stake, substantial and structural.

While a lot of attention was paid to the former, wondering whether: does cyberspace promise privacy or access? Will it allow a free culture or a culture of permission? It will retain a space for freedom of speech? Has not given enough emphasis to the different structures that influence us within cyberspace, how to define, limit or regulate arbitrary regulatory power, asking: what controls and balances are possible in this space? How to separate powers? How to ensure that a regulator, or a government, does not become too powerful or not enough? Which regulator do you prefer? Which regulators should be checked? How does the society exercise control over entities that aim to control it (Lessig 2006)?



It is the myth of mechanisation of «socially necessary, but annoying» activities that paves the way for new organised forms of political control. Precisely for this reason it is necessary a «constitutional rule of technology» that protects values and rights, which otherwise, most probably, we would be completely willing to trade for a little less work (Simoncini 2020).

We need to imagine «an Ai for good administration» that returns to the Republic a Pa that today more than ever can be understood according to the Constitution: as a good administration (art. 41 Charter of fundamental rights of the Eu, art. 97 Italian Constitution), capable of intelliging, of defining systemic standards of action with which to promptly decide, taking into account the complexity in which all human behaviour is now embedded, grasping what appears to us to be an entirely singular fact to the naked eye (Cavallo Perin 2022).

## References

- ACCENTURE (2023), “La nuova era dell’AI generativa”, *Accenture*, <https://www.accenture.com/it-it/insights/technology/generative-ai>. Last accessed 17 January 2024.
- ACQUATI, E., MACELLARI S. and OSNAGHI, A. (2012), *P.A.: La Pubblica amministrazione che si trasforma: cloud computing, federalismo, interoperabilità*, Firenze, Passigli.
- AGARWAL, P. (2018), “Public Administration Challenges in the World of AI and Bots”, *Public Administration Review*, 78(6): 917-921.
- AGRIFOGLIO, R., METALLO, C. and ROSSIGNOLI, C. (2021), “Blockchain nella Pubblica amministrazione: benefici attesi e implicazioni organizzative”, *Prospettive in Organizzazione*, 14, 1-8.
- ALBERTI, I. (2023), *Le nuove tecnologie nella fase istruttoria del procedimento amministrativo*, in J. B. AUBY, G. DE MINICO and G. ORSONI (eds.), *L’Amministrazione digitale. Quotidiana efficienza e intelligenza delle scelte*, Contence Proceedings 9-10 May 2022, Napoli, Editoriale Scientifica, 169-182.
- ALFONSI, E., BERARDI, P., CASALINO, N. and SPAGNUOLO, G. (2015), “Organizational Design of the One Stop Shop for Productive Activities (Suap): How to Implement Changes in the Governance, Design and Delivery of Public Services”, paper presented at *XVI Workshop on Organizzazione Aziendale. Back to basics: searching for new forms of organizing*, Padova, Italia, 21-22 May.
- AMMANNATI, L., CANEPA, A., GRECO, G. and MINNECI, U. (2021), *Algoritmi, Big Data, piattaforme digitali*, Torino, Giappichelli.
- ARMENIA, S., CASALINO, N., GNAN, L., and FLAMINI, G. (2021), “A Systems Approach to the Digital Transformation of Public Administration”, *Prospettive in Organizzazione*, <https://prospettiveinorganizzazione.assioa.it/a-systems-approach-to-the-digital-transformation-of-public-administration/?print-posts=pdf>.

- AUBY, J. B. (2019), "Il diritto amministrativo di fronte alle sfide digitali", *Istituzioni del Federalismo*, 3, 619-641.
- AUBY, J. B. (2023), "Conclusioni", in J. B. AUBY, G. DE MINICO and G. ORSONI (eds), *L'Amministrazione Digitale. Quotidiana efficienza e intelligenza delle scelte*. Contence Proceedings 9-10 May 2022, Napoli, Editoriale Scientifica, 287-290.
- AVANZINI, G. (2019), *Decisioni amministrative e algoritmi informatici. Predeterminazione, analisi predittiva e nuove forme di intellegibilità*, Napoli, Editoriale Scientifica.
- BAGNI, F. (2024), *The Regulatory Sandbox and the Cybersecurity Challenge: from the Artificial Intelligence Act to the Cyber Resilience Act*, paper presented at *Public Governance and Emerging Technologies: Values, Trust, and Compliance by Design*, Utrecht, Paesi Bassi, 11-12 January.
- BARMANN, B. (2021), "Lo Stato digitale nel Pnrr – Servizi digitali e Cittadinanza digitale", *Osservatorio sullo Stato Digitale*, sezione Amministrazione, in Irpa. <https://www.irpa.eu/focus-irpa-lo-stato-digitale-nel-pnrr/>. Last accessed 17 January 2024.
- BARTH, T. and ARNOLD, E. (1999), "Artificial Intelligence and Administrative Discretion: Implications for Public Administration", *The American Review of Public Administration*, 29(4): 332-351.
- BIUSO, A. G. (2018), "Corporeità, sicurezza e potere in Internet", *Lessico di etica pubblica*, <http://www.eticapubblica.it/lessico-di-etica-pubblica-anno-ix-numero-12018-issn-2039-2206-a-cura-di-d-sisto>. Last accessed 17 January 2024.
- BORRIELLO, G. (2023), "'Spid vote': Fast Democracy and Digital Identity for Citizens in Italy", *Rivista di Digital Politics*, 3(1): 49-72.
- BOSCHETTI, B. and CELATI, B. (2022) (eds.), "La buona amministrazione", *Laboratorio Futuro (Istituto Toniolo) e Recovery Lab Resilience*, Università Cattolica del Sacro Cuore, <https://www.laboratoriofuturo.it/ricerche/la-buona-amministrazione>. Last accessed 17 January 2024.
- CALZOLAIO, E. (2020) (ed.), *La decisione nel prisma dell'intelligenza artificiale*, Padova, Cedam.
- CAMMELLI, M. (2014), *La Pubblica amministrazione italiana*, Bologna, Il Mulino.
- CARLINO, G. (2023), *Intervento introduttivo*, in J. B. AUBY, G. DE MINICO and G. ORSONI (eds.), *L'Amministrazione Digitale. Quotidiana efficienza e intelligenza delle scelte*, Contence Proceedings 9-10 May 2022, Napoli, Editoriale Scientifica, 21-24.
- CARLONI, E. (2019), "Algoritmi su carta. Politiche di digitalizzazione e trasformazione digitale delle amministrazioni", *Diritto Amministrativo*, 25(2): 363-391.
- CARLONI, E. (2020), "I principi della legalità algoritmica. Le decisioni automatizzate di fronte al giudice amministrativo", *Diritto Amministrativo*, 28(2): 273- 304.
- CARULLO, G. (2023), "Large Language Model for Transparent and Intelligible AI-Assisted Public Decision-Making", *Rivista Interdisciplinare sul Diritto delle Amministrazioni Pubbliche*. doi:10.13130/2723-9195/2023-3-100.
- CAVALLO PERIN, R. (2020), "Ragionando come se la digitalizzazione fosse data", *Diritto Amministrativo*, 28(2): 305-328.

- CAVALLO PERIN, R. and ALBERTI, I. (2020), *Atti e procedimenti amministrativi digitali*, in R. CAVALLO PERIN and D. U. GALETTA (eds.), *Diritto dell'amministrazione pubblica digitale*, Torino, Giappichelli.
- CAVALLO PERIN, R. (2022), *La digitalizzazione e l'analisi dati*, in R. CAVALLO PERIN, M. LIPARI and G.M. RACCA, (eds.), *Contratti pubblici e innovazioni per l'attuazione della Legge Delega*, Napoli, Jovene, 119-131.
- CAVALLO PERIN, R. (2023), *Il principio di legalità nell'amministrare pubblico per algoritmi*, in J. B. AUBY, G. DE MINICO and G. ORSONI (eds.) *L'Amministrazione Digitale. Quotidiana efficienza e intelligenza delle scelte*, Conference Proceedings 9-10 May 2022, Napoli, Editoriale Scientifica, 99-110.
- CIVITARESE MATTEUCCI, S. and TORCHIA, L. (2016), *La tecnificazione (vol. IV)*, Firenze, Firenze University Press.
- COBBE, J. (2019), "Administrative Law and the Machines of Government: Judicial Review of Automated", *Public-Sector Decision-Making, Legal Studies*, 39(4): 636-655.
- CONSIGLIO DI STATO, *Sezione VI*, Sentenza del 8 aprile 2019, n. 2270.
- CONSIGLIO DI STATO, *Sezione VI*, Sentenza del 13 dicembre 2019, n. 8472.
- CONSIGLIO DI STATO, *Sezione VI*, Sentenza del 4 febbraio 2020, n. 881.
- COSTANTINO, F. (2015) "Informatizzazione della P.A.", *Enciclopedia Treccani online*, [https://www.treccani.it/enciclopedia/informatizzazione-della-p-a\\_](https://www.treccani.it/enciclopedia/informatizzazione-della-p-a_) (Diritto-online). Last accessed 17 January 2024.
- DALFINO, D. (2020), "Decisione amministrativa robotica ed effetto performativo. Un beffardo algoritmo per una «buona scuola»", *Questione Giustizia*. [https://www.questionegiustizia.it/articolo/decisione-amministrativa-robotica-ed-effetto-performativo-un-beffardo-algoritmo-per-una-buona-scuola\\_13-01-2020.php](https://www.questionegiustizia.it/articolo/decisione-amministrativa-robotica-ed-effetto-performativo-un-beffardo-algoritmo-per-una-buona-scuola_13-01-2020.php). Last accessed 17 January 2024.
- D'ANCONA, S. and PROVENZANO, P. (2020), *L'identità digitale e la firma digitale*, in R. CAVALLO PERIN and D.U. GALETTA (eds.), *Il diritto dell'amministrazione pubblica digitale*, Torino, Giappichelli, 234-240.
- DELGADO, I. M. (2019), "Automazione, intelligenza artificiale e pubblica amministrazione: vecchie categorie concettuali per nuovi problemi?", *Istituzioni del Federalismo*, 3, 643-662.
- DOCS ITALIA (2023), "Manuale operativo di design", *Docs Italia*, <https://docs.italia.it/italia/designers-italia/manuale-operativo-design-docs/it/versione-corrente/doc/progettazione-di-servizi.html>. Last accessed 17 January 2024.
- FLICK, G.M. and FLICK, C. (2022), *L'algoritmo d'oro e la Torre di Babele*, Milano, Baldini+Castoldi.
- FLORIDI, L. (2023), "AI as Agency Without Intelligence: on ChatGPT, Large Language Model, and Other Generative Model", *SSRN, Social Science Research Network*. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4358789](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4358789). Last accessed 17 January 2024.
- FUMAGALLI, F. (2023), "Artificial intelligence e trasformazione digitale della pubblica amministrazione", *Rivista elettronica di Diritto, Economia, Management*, 4, 141-149.

- GAETANO, S. (2023), "L'evoluzione del procedimento amministrativo nell'era dell'intelligenza artificiale", *Rivista elettronica di Diritto, Economia, Management*, 4, 150-191.
- GALETTA, D.U. and CORVALAN, I. G. (2019), "Intelligenza Artificiale per una Pubblica Amministrazione 4.0? Potenzialità, rischi e sfide della rivoluzione tecnologica in atto", *Federalismi.it*, 3, 1-23.
- GALETTA, D. U. (2020), "Algoritmi, procedimento amministrativo e garanzie: brevi riflessioni, anche alla luce degli ultimi arresti giurisprudenziali in materia", *RIDPC*, 4, 501-518.
- GALETTA, D. U. (2023a), *La pubblica amministrazione oggi, fra intelligenza artificiale e intelligenza umana*, in J. B. AUBY, G. DE MINICO and G. ORSONI (eds.), *L'Amministrazione Digitale. Quotidiana efficienza e intelligenza delle scelte*, Contence Proceedings 9-10 May 2022, Napoli, Editoriale Scientifica, 121-130.
- GALETTA, D. U. and PINOTTI, G. (2023b), "Algorithmic Decision-Making Systems in the Italian Public Administration", *Rivista Interdisciplinare sul Diritto delle Amministrazioni Pubbliche*, 1, 13-23.
- GENTILI, G. (2023), "Verso istituzioni 'pronte' per l'intelligenza artificiale", *Rivista elettronica di Diritto, Economia, Management*, 4, 192-200.
- HAITSMA, L., BRINK, B. and MAYHEW, E. (2024), "Searching for Complementarity: a Comprehensive Literature Review of Human Intervention in (Semi)Automated Administrative Decision-Making", paper presented at *Public Governance and Emerging Technologies: Values, Trust, and Compliance by Design*, Utrecht, Paesi Bassi, 11-12 January.
- JORNA, F. and WAGENAAR, P. (2007), "The 'Iron Cage' Strengthened? Discretion and Digital Discipline", *Public Administration*, 85(1): 189-214.
- LESSIG, L. (2006), *Code: And Other Laws of Cyberspace*, Version 2.0, New York, Basic Books.
- LIMONE, D. (2023), "Sbloccare il cantiere della PA digitale: ecco le cose da fare", *Agenda Digitale*, 18 November, <https://www.agendadigitale.eu/cittadinanza-digitale/sbloccare-il-cantiere-della-pa-digitale-ecco-le-cose-da-fare>.
- LIPPI, A. (2022), *Modelli di amministrazioni pubbliche*, Bologna, Il Mulino.
- LORENZ, L., VAN ERP, J. and MEIJER, A. (2022), "Machine-Learning Algorithms in Regulatory Practice: Nine Organisational Challenges for Regulatory Agencies", *Technology and Regulation*. doi: 10.26116/techreg.2022.001.
- LOSANO, M. (2022), *Scritti di informatica e diritto*, Milano, Mimesis.
- MACCHIA, M. (2021), "Blockchain and public authorities: a field yet to be explored", *European Review of Digital Administration and Law*, 2 (2): 19-29.
- MACCHIA, M. (2022), "Pubblica amministrazione e tecniche algoritmiche", *Diritto Pubblico Comparato ed Europe*. doi: 10.57660/dpceonline.2022.1575.
- MANCARELLA, M. (2023), "Intelligenza artificiale e pubblica amministrazione: riflessioni di Informatica giuridica", *Rivista elettronica di Diritto, Economia, Management*, 4, 251-263.

- MARCHIANÒ, G. (2020), "La legalità algoritmica nella giurisprudenza amministrativa", *Il diritto dell'economia*, 103 (3): 229-258.
- MATTARELLA, B. G. (2019), *Le riforme amministrative in Italia 2016-2018*, in L. DE LUCIA and G. WOLLENSCHLAEGER (eds.), *Sfide e innovazioni nel diritto pubblico*, Torino, Giappichelli, 157-164.
- MUSELLA, F. (2021), "Amministrazione 5.0", *Rivista di Digital Politics*, 1(1): 95-112.
- MUSELLA, F. (2022), "Digital regulation: come si cambia la Pubblica amministrazione", *Rivista di Digital Politics*, 2 (1-2): 3-32.
- NATALINI, A. (2006), *Il tempo delle riforme amministrative*, Bologna, Il Mulino.
- NATALINI, A. and DI MASCIÒ, F. (2022), *Pubbliche Amministrazioni. Tradizioni, paradigmi e percorsi di ricerca*, Bologna, Il Mulino.
- NOWOTNY, H. (2022), *Le macchine di Dio*, Roma, Luiss University Press.
- ORSONI, G. and D'ORLANDO, E. (2019), "Nuove prospettive dell'amministrazione digitale: open data e algoritmi", *Le Istituzioni del Federalismo, Rivista di Studi Giuridici e Politici*, 40, 593-618.
- PAGANO, F. (2021), "Pubblica amministrazione e innovazione tecnologica", *La Rivista Gruppo di Pisa*, 3, 84-112.
- PASQUALE, F. (2015), *The Black Box Society. The Secret Algorithms that Control Money and Information*, Cambridge, Harvard University Press.
- PATRONI GRIFFI, F. (2018), "La decisione robotica e il giudice amministrativo", paper presented at the Conference *Decisione robotica*, Accademia dei Lincei, Rome, Italy, 5 July.
- PETERS, G. (2018), *The Politics of Bureaucracy*, London, Routledge.
- PRIFTI, K., NOVELLI, C., MORLEY, J. and FLORIDI, L. (2024), "Rethinking Regulation by Design", paper presented at *Public Governance and Emerging Technologies: Values, Trust, and Compliance by Design*, Utrecht, Netherland, 11-12 January.
- RANCHORDAS, S. (2024), *The Invisible Citizen in The Digital State: Administrative Law Meets Digital Constitutionalism*, in J. DE POORTER, C. OIRSOUW and G. VAN DER SCHYFF (eds.), *European Yearbook of Constitutional Law*.
- REIS, J., ESPIRITO SANTO, P. and MELAO, N. (2019), "Impacts of Artificial Intelligence On Public Administration: A Systematic Literature Review", paper presented at *14th Iberian Conference on Information Systems and Technologies (Cisti)*, Coimbra, Portugal, 19-22 June.
- ROLLI, R. and D'AMBROSIO, M. (2021), "La necessaria lettura antropocentrica della rivoluzione 4.0, Pa persona e amministrazione", *Ricerche Giuridiche sull'Amministrazione e l'Economia*, 8 (1): 573-593.
- SCHWAB, K. and PYKA, P. (2016), *Die Vierte Industrielle Revolution*, München, Pantheon.
- SGUEO, G. (2022), "The Paradox of 'Low-Fi' Digital Public Services", *Rivista di Digital Politics*, 2 (1-2): 33-52.
- SIMONCINI, A. (2020), *Amministrazione digitale algoritmica. Il quadro costituzionale*, in R. CAVALLO PERIN, and D.U. GALETTA, (eds.), *Il Diritto dell'Amministrazione Pubblica digitale*, Torino, Giappichelli.

- SOLA, A. (2020), "L'automatizzazione dell'azione amministrativa", *Amministrazione in Cammino*, 1-15.
- SOMALVICO, M. (1992), "Intelligenza artificiale", *Enciclopedia Treccani online*, [https://www.treccani.it/enciclopedia/intelligenza-artificiale\\_%28Enciclopedia-Italiana%29](https://www.treccani.it/enciclopedia/intelligenza-artificiale_%28Enciclopedia-Italiana%29). Last accessed 17 January 2024.
- SPAGNUOLO, G. (2022), "Il procedimento automatizzato: il caso dello Sportello unico per le attività produttive (Suap)", *Rivista di Digital Politics*, 2 (1-2), pp. 269-284.
- STACCA, S. AND ELIA, M. (2022), "Trattamento dei dati personali, strumenti di intelligenza artificiale e regolamentazione nell'attività della Banca d'Italia: ovvero quando disciplinare l'automazione è possibile", *Ianus*, 25, 23-106.
- SUNSTEIN, C. (2021), *Sludge: Bureaucratic Burdens and Why We Should Eliminate Them*, Cambridge, MIT Press.
- TOFFALORI, C. (2015), *Algoritmi. Raccontare la matematica*, Bologna, Il Mulino.
- TORCHIA, L. (2023a), *Lo Stato digitale*, Bologna, Il Mulino.
- TORCHIA, L. (2023b), "Poteri pubblici e poteri privati nel mondo digitale", paper presented at the XXXVIII Lettura Mulino, Bologna, Italy, 25 November.
- TORCHIA, L. (2023c), "Regole per i giganti", *Corriere della Sera*, 19 November, [https://irpa-eu-images.b-cdn.net/wp-content/uploads/2023/11/2023-11-20-17\\_30\\_29-la-Lettura-%E2%80%93-Mozilla-Firefox1.pdf](https://irpa-eu-images.b-cdn.net/wp-content/uploads/2023/11/2023-11-20-17_30_29-la-Lettura-%E2%80%93-Mozilla-Firefox1.pdf).
- TRAVI, A. (2022), *Pubblica amministrazione. Burocrazia o servizio al cittadino?*, Milano, Vita e Pensiero.
- UTRECHT UNIVERSITY (2024), *Public Governance and Emerging Technologies: Values, Trust, and Compliance by Design*. <https://www.uu.nl/en/media/105122>. Last accessed 17 January 2024.
- VITTORIA, A. (2022), "Verso una burocrazia legale-digitale?", *Rivista di Digital Politics*, 2 (1-2): 135-156.
- WIESE, L. (2021), "The use of blockchain in public administration", *European Review of Digital Administration and Law*, 2(2): 31-36.
- ZICCARDI, G. (2022), *Diritti digitali*, Milano, Raffaello Cortina.
- ZORLONI, L. (2023), "I piani per fare di Agid la futura agenzia nazionale dell'intelligenza artificiale", *Wired*, 14 July, <https://www.wired.it/article/intelligenza-artificiale-agid-autorita-nazionale-pnrr/>.

