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Government in the digital era: can we do more with less?

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1. Introduction

A sentiment increasingly echoed in the European Union is that we need more digital tools in the public sector to «*advance the modernisation of public administrations*»¹.

However, digitization of Public Administration (PA) is a complex task with a variety of legal implications, and its ineffective implementation can actually lead to large-scale inefficiencies². The challenge currently facing our legal systems is how the human, software, and hardware resources required to efficiently and effectively transform paper-based procedures into digital processes can be acquired.

In this context, the need to reorganize administrative activities – at the Italian level – is in conflict with the need to reduce public spending, an issue that has become a constant concern due to the economic stagnation that has characterized the last several years. This conflict is well represented by many recent Italian laws. For example, we may refer to the recent amendment that has expanded the right of access. In essence, as a result of the latest changes, now any individual, without being required to claim any particular interest, is entitled to request nearly any document held by a national PA. While requiring that the access through digital means shall be free of any charge³ though, the legislator has nevertheless provided that “the implementation of this Decree must not result in new or increased public spending” and that PA “shall comply with the provisions of this Decree with the human, instrumental and financial resources available under current legislation”⁴.

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¹ Communication on the EU eGovernment Action Plan 2016-2020 - Accelerating the digital transformation of government, p. 1 (COM(2016) 179).

² Alexandru V, ROMAN, „Realizing E-Government: Delineating Implementation Challenges and Defining Success”, in: HALPIN / GRIFFIN / RANKIN / DISSANAYAKE / MAHTAB (eds.), *Digital Public Administration and E-Government in Developing Nations: Policy and Practice*, Hershey, 2013, p. 112.

³ See art. 5 of Legislative Decree no. 33 of 2013, as replaced by art. 6, paragraph 1, Legislative Decree no. 97 of 2016.

⁴ See art. 44, para. 1, of Legislative Decree no. 97 of 2016.

In sharing the criticisms of this type of legislative technique⁵, the contradictory nature of the position taken by the Italian legislator offers an opportunity to reflect on the key principles that can guide the adoption of digital tools by PA. In this way, we may gain clearer insight into whether it can be deemed realistic to achieve the goal set by the Italian legislator, i.e., entrusting PA with new tasks, while requiring it to adopt new digital tools, all without any additional spending.

The ability of administrations to manage the information they require with technological tools can – hopefully – benefit of their activities, citizens and businesses⁶. By simplifying and updating the tools available to public offices, in fact, one can imagine that faster and more efficient processing of the information needed in various procedural phases can be achieved⁷. This could then result in an overall improvement in the efficiency of administrative action⁸.

To that end, we may consider that the digitization of administrative procedures is leading to an increasingly extensive interconnection of the systems provided to public bodies. With the recent *Digital Market Communication*, the European Commission has in fact expressed the hope that «*an inclusive e-society*» could soon be implemented, one «*in which citizens and businesses have the necessary skills and can benefit from interlinked and multi-lingual e-services, from e-government, e-justice, e-health, e-energy or e-transport*»⁹.

The concept of interoperability is therefore of particular relevance, as an element that allows wider and easier circulation of information and data in the public sector. Given the limited scope of this presentation, we will focus our attention on its meaning and its relevance within the principles of administrative law. The aim is to assess to what degree such a technical term can be translated into a legal principle that can guide the administrative decisions on what digital tools to implement or adopt. In order to do so, we must first clarify, from a technical standpoint, the meaning of interoperability.

⁵ Diana Urania, GALETTA, „Accesso civico e trasparenza della Pubblica Amministrazione alla luce delle (previste) modifiche alle disposizioni del Decreto Legislativo n. 33/2013”, in: *Federalismi.it*, 5, 2016, p. 1 (18).

⁶ Bernardo Giorgio, MATTARELLA, „Il procedimento”, in: CASSESE (ed.), *Istituzioni di diritto amministrativo*, V Ed., Milano, 2015, p. 283 (314).

⁷ Francesco, CARDARELLI, „3 bis. Uso della telematica”, in: SANDULLI (ed.), *Codice dell'azione amministrativa*, Milano, 2010, p. 421 (427–428).

⁸ Riccardo, ACCIAI, *Privacy e banche dati pubbliche: il trattamento dei dati personali nelle pubbliche amministrazioni*, 2001, p. XXII

⁹ See the Communication from the Commission on A Digital Single Market Strategy for Europe (COM (2015) 192) (*Digital Single Market Communication*), p. 4.3.

2. The technical definition of interoperability.

We can start with the definition offered by the European Commission in its *Communication on the role of eGovernment for Europe's future*¹⁰. Interoperability is understood in this document as *«the means by which this inter-linking of systems, information and ways of working will occur: within or between administrations, nationally or across Europe, or with the enterprise sector»*. More recently, the Commission has confirmed its position on the matter, stating that *«in the digital economy, interoperability means ensuring effective communication between digital components like devices, networks or data repositories»*¹¹.

Starting with the notion offered by the EU Commission, the various perspectives under which interoperability can be studied have been further analysed. The concepts of technical, semantic and organizational interoperability, in particular, have been identified. According to the authors, *«technical interoperability» «is concerned with the technical issues of linking up computer systems, the definition of open interfaces, data formats and protocols, including telecommunications»*; *«semantic interoperability» «is concerned with ensuring that the precise meaning of exchanged information is understandable by any other application not initially developed for this purpose»*; finally, *«organizational interoperability» «is concerned with modeling business processes, aligning information architectures with organizational goals and helping business processes to co-operate»*¹².

In technical terms, these interconnections between computer systems have also been described as virtual networks, i.e., as networks that are not based on physical connections, but on invisible links between their nodes¹³. Such links, constituting the “virtual networks”, are also represented by some as languages¹⁴, since they represent the ways in which different systems “talk” amongst themselves – that is, communicate with each other – and thus constitute the means by which information is exchanged.

To further specify this preliminary definition, however, we must acknowledge the different meanings the term can have depending on the situation in which it comes into play. It has in fact been explained that the meaning to be given to in-

¹⁰ COM(2003) 567.

¹¹ Digital Single Market Communication.

¹² Herbert, KUBICEK / Ralf CIMANDER / Hans Jochen, SCHOLL, *Organizational Interoperability in E-Government: Lessons from 77 European Good-Practice Cases*, Berlin, 2011, p. 23.

¹³ Carl SHAPIRO / Hal R., VARIAN, *Information Rules: A Strategic Guide to the Network Economy*, Boston, 1999.

¹⁴ Michael J., SCHALLOP, „The IPR Paradox: Leveraging Intellectual Property Rights to Encourage Interoperability in the Network Computing Age”, in: *AIPLA Q. J.*, vol. 28, 2000, p. 195 (208).

teroperability can vary considerably depending on the context in which it is used¹⁵. For this reason, these authors refer to some notions of the term that are likely to have a broader scope, stating that «*interoperability is the ability of two systems to interoperate using the same communication protocol*», and that «*interoperability is the ability of equipment from different manufacturers (or different systems) to communicate together on the same infrastructure (same system), or on another while roaming*», and that interoperability can also be regarded as «*the ability of two or more systems or components to exchange data and use information*».

We can therefore assert that, for our purposes, two interoperable systems are capable of an effective and automated exchange of data or information.

In this respect, however, it remains to be clarified what is meant by “system”. To this end, the definition of interoperability offered by the cited ISO vocabulary comes in handy: «*capability to communicate, execute programs, or transfer data among various functional units in a manner that requires the user to have little or no knowledge of the unique characteristics of those units*»¹⁶. Thus the notion of a “functional unit” has also yet to be clarified. This latter term is defined as any «*entity of hardware or software, or both, capable of accomplishing a specified purpose*»¹⁷.

Therefore, the essential concept for identifying the autonomy of each system in relation to the others is given by the ability of each unit to perform a function independently of the others. And the fact that neither hardware nor software is a necessary component of a unit, one that can be shared with other units, allows us to understand that the “system” discussed so far can well be installed within the same IT infrastructure, along with other systems (or functional units), while remaining autonomous of others.

This means that even within the same IT infrastructure, such as the host of a database, there may be – and in fact, there are – more functional systems that run autonomously.

3. *The role of interoperability in defining the information and communications technology (ICT) strategies of administrations.*

In the light of the above-mentioned notion of interoperability, it emerges that

¹⁵ Hans, VAN DER VEER / Anthony, WILES, „Achieving Technical Interoperability - the ETSI Approach”, in: *European Telecommunications Standards Institute (ETSI) White Paper*, 3, 2006, p. 1 (5).

¹⁶ Definition n. 2121317 of the ISO/IEC 2382:2015 vocabulary, www.iso.org/obp/ui/#iso:std:iso-iec:2382:ed-1:v1:en.

¹⁷ ISO/IEC 2382:2015 vocabulary, definition n. 2121310.

this characteristic of computer systems is relevant both where inter-agency relations have to be established, and within a single office. Even in a closed ecosystem, the need to make the various components capable of communicating with each other can arise. As a consequence, it can be argued that interoperability is important both where all activities are attributed to the same subject, as well as in those cases involving more entities.

For this reason, the implementation of interoperable systems in the public sector can have both internal and external implications. Where interoperable systems are deployed, an office, or an entity, may have access to information held by another office, or another administration, without the necessity – at least from a technical standpoint – of any interaction between officials. The applicant would be able to access, through a computer system, the necessary data, and thus automatically retrieve the information required to conclude the administrative procedure.

As anticipated in the introduction, connecting two administrations can actually be more efficient because it makes data acquisition faster. In other words, there may be more elements on which to base a decision, without the need for more investigative activities. In this strict sense, this may appear to be actually founded the phrase “do more with less”.

Given these positive effects, one would conclude that computer systems should be designed from the outset as systems able to operate in an interconnected manner, regardless of the actual solutions that may require such capability.

However, making any system fully interoperable would entail a range of fairly complex activities, because each system element should be engineered accordingly. It has in fact been argued that «*creating new levels of interoperability remains a complex and expensive endeavor*»¹⁸. This is because, in defining the technical rules of interoperability, it is necessary to predefine exactly what interactions will be allowed between two or more systems, thereby identifying and structuring the related data that will have to be exchanged. The realization of an interoperable system therefore normally involves a far greater degree of complexity than the creation of an isolated system, and this complexity gradually increases with the quantity and variety of information to be exchanged, and the systems to be interconnected.

The need to assess whether or not to implement an interoperable system within a PA, should therefore be assessed on a case-by-case basis, according to traditional methods of administrative law. To that end, it can be maintained that the decision concerning the instruments to be adopted essentially involves a judgment of proportionality, which is intended to ascertain the «*suitability/appropriateness*

¹⁸ Theresa A., PARDO / Taewoo, NAM / G. Brian, BURKE, „E-Government Interoperability Interaction of Policy, Management, and Technology Dimensions”, in: *Social Science Computer Review*, vol. 30, 1, 2012, p. 1 (16).

(*Geeignetheit*), *necessity (Erforderlichkeit)*, and *proportionality in the narrow sense (Verhältnismäßigkeit im engeren Sinne)*» of the measure to be taken¹⁹. However, in the context of that judgment it is necessary to assess what public interest may justify the adoption of an interoperable system, given the additional costs and endeavours that this may entail. In other words, it is necessary to identify the legal principle behind the concept of interoperability and to translate this technical notion into a legal concept, one that can be properly evaluated within an administrative decision, and therefore in the context of a proportionality test as mentioned above.

To this end, we can briefly look at a case where a lack of interoperability was at issue in order to deduce, *a contrario*, the legal dimension of interoperability.

4. *Failing to provide “interoperability information”*: *Microsoft v. Commission*²⁰.

The Microsoft case offers a good opportunity to evaluate how interoperability can be translated into a relational concept. Before starting the analysis, however, it is worth stressing that the case at issue has been the subject of a particularly complex procedure, which has led to an equally intricate trial. Many legal arguments were put forward by both parties, and as a result, the judgment of the Court of First Instance (CFI) was a rather complex one. For this reason, only the aspects that are most relevant to this presentation will be highlighted.

That being said, it may be recalled that the dispute between Microsoft and the European Commission originated from a complaint by Sun Microsystems concerning a number of Microsoft’s commercial practices implemented during the 1990s.

In this regard, Sun Microsystems held that, amongst other things, «*it is in the industry’s best interest that applications written to execute on Solaris be able to seamlessly communicate via COM and/or Active Directory with the Windows operating systems and/or with Windows-based software*», and thus that «*Microsoft should include a reference implementation and such other information as is necessary to insure, without reverse engineering, that COM objects and the complete set of Active Directory technologies will run in full compatible fashion on Solaris*»²¹.

¹⁹ Diana Urania, GALETTA, „General Principles of EU Law as Evidence of the Development of a Common European Legal Thinking: the Example of the Proportionality Principle (from the Italian Perspective)”, in: BLANKE / GAS / CRUZ VILLALÓN / ZILLER (eds.), *Common European Legal Thinking. Festschrift für Albrecht Weber zum 70. Geburtstag*, Heidelberg-Dordrecht-London-New York, 2015, p. 221 (228).

²⁰ CFI, Decision of 17.09.2007 – Case T-201/04, *Microsoft v. Commission*, ECR 2007, II-03601.

²¹ Case T-201/04, p. 3.

Given the complexity of the case, to better summarize the its key points, we may refer to the wording of a subsequent case brought by Microsoft against another Commission decision concerning the definitive amount of the default interest imposed on the company²². In that case, the CFI had an opportunity to briefly summarize the findings of the Commission, as upheld by the Court itself. The Court explains that Microsoft refused «*to supply its competitors with ‘interoperability information’ and to authorise the use of that information for the purpose of developing and distributing products competing with Microsoft’s own products on the work group server operating systems market*»²³. For that reason, the Commission has «*required [Microsoft] to grant access to, and authorise the use of, the interoperability information on reasonable and non-discriminatory terms*»²⁴.

In essence, Microsoft was found guilty of abuse of a dominant position because it did not make interoperability specifications available to a competitor in the server sector. In other words, Microsoft failed to make certain information available to third parties.

In light of the fact that at the core of the Microsoft case there was a failure to share information, in an attempt to bring interoperability to a legal concept, reference can be made to Article 197 TFUE, which also provides for an information exchange mechanism. In particular, it states that «*effective implementation of Union law by the Member States, which is essential for the proper functioning of the Union, shall be regarded as a matter of common interest*»²⁵, and that «*the Union may support the efforts of Member States to improve their administrative capacity to implement Union law. Such action may include facilitating the exchange of information and of civil servants as well as supporting training schemes*»²⁶.

The common element found in the Microsoft case and in Article 197 TFEU is therefore that both of them postulate the exchange of information. In the former, as we have seen, the exchange of information was necessary to ensure the possibility of making two or more systems interoperable, while in the latter this exchange of information aims to improve the administrative capacity of Member States to implement Union law.

It is important to recall that the exchange of information provided for by Article 197 is functional to the realization of administrative cooperation between

²² CFI, Decision of 27.06.2012 – Case T-167/08, *Microsoft v. Commission*, published in the electronic Reports of Cases.

²³ Paragraph 3.

²⁴ Paragraph 21.

²⁵ Paragraph 1.

²⁶ Paragraph 2.

Member States and between them and the Union²⁷, and that administrative cooperation can have a much greater scope within the EU²⁸. As regards administrative law, interoperability in that sense can thus be translated from a technical term into a relational concept, based on the principle of administrative cooperation.

As a matter of fact, the Italian legislature, in an attempt to go beyond the technical notion of interoperability, has introduced the concept of “systems cooperation”, with the intention of providing a practical and concrete notion applicable to ICT of the principle of administrative cooperation²⁹. This notion, while it confirms the cooperative nature of interoperability, on the other hand introduces an element that does not seem best suited to becoming a new principle of administrative law, given its practical and concrete nature.

Having clarified that the concept of interoperability can be linked to the principle of administrative cooperation, it is therefore preferable to assess how this latter principle can become part of the administrative decision concerning which digital tools to implement.

5. Conclusion: the role of the administrative cooperation principle in choosing ITC solutions for PA.

In light of the foregoing, it can be said that the legal principle that is realized through interoperability is that of administrative cooperation, which can be understood as the ability of PA to exchange information. This is because, thanks to the implementation of interconnected systems, public entities can now exchange data and information effectively and efficiently.

It is therefore the principle of administrative cooperation that can guide the choice of administrations as to what degree of interoperability to ensure when implementing new systems, or updating existing ones. In other words, in the scope of the discretionary assessment referred to above, and therefore in the judgment of proportionality between the costs to be incurred and the advantages to be achieved, PA must take account of the level of administrative cooperation that has to be ensured, or that is deemed appropriate. This will thus result in determining the level of interoperability that is to be guaranteed.

For this reason, where the administration does not have an actual need to exchange data with third parties, making IT systems interoperable with a hypothetical

²⁷ Roberto, ADAM / Antonio, TIZZANO, *Manuale di Diritto dell'Unione europea*, Torino, 2014.

²⁸ François, LAFARGE, „Administrative Cooperation Between Member States and Implementation of EU Law”, in: *Eur. Pub. L.*, vol. 16, 2010, p. 597 (609).

²⁹ Fulvio, COSTANTINO, *Autonomia dell'amministrazione e innovazione digitale*, Napoli, 2012, p. 76.

external entity may result in disproportionate costs. In these cases, therefore, administration should refrain from seeking more complex solutions than are strictly necessary. Interoperability must in fact be seen as a means and not an end³⁰, so it is meaningless to implement it in the absence of a concrete need.

Having said this, it must also be added that administrative cooperation, at least at the EU level, is a principle that informs many aspects of administrative activities³¹. For this reason, the choice of which systems to implement, given comparable costs, should generally fall to solutions that will to the greatest degree possible allow for future interoperability, if and where the need arises. In other words, even where current requirements of the administration do not impose the adoption of interoperable systems, options that will provide the ability to implement future connections with other systems without excessive technical burden should be preferred, when comparing economically equivalent solutions.

Finally, it has to be stressed that interoperability is a technical word, not a legal concept. Such terminology has been borrowed by public law from the ICT terminology. Thus one could question the need to speak about interoperability itself when dealing with the organizational measures to be adopted by PA from a legal perspective.

Given the rapidity with which information and communications technologies change, it seems preferable to refer only to legal concepts, rather than the technical elements to be implemented. To this end, we should focus on identifying the core elements of IT systems to be adopted, or those which have already been implemented, by PA in their abstract legal dimensions. We should thus avoid merely analysing the individual practical or technical tools to be used. While the latter are likely to be subject to obsolescence, the legal categories within which they are framed appear to be endowed with greater resistance over time, as these can be applied to different technological solutions. For instance, one can well imagine that the creation of new tools will eventually help us to overcome the current difficulties in creating interoperable systems. On the contrary, it is unlikely that the principle of administrative cooperation will ever become obsolete.

For this reason, the notion of “systems cooperation” introduced by the Italian legislator seems unfortunate. As mentioned, such an expression was introduced in order to translate an abstract legal concept into a concrete criterion to describe the characteristics of ICT systems to be adopted by PA. However, in doing so, the legislative notion – which in itself should be abstract and general – has been linked to

³⁰ Theresa A., PARDO / Taewoo, NAM / G. Brian, BURKE, *E-Government Interoperability*, cit., p. 9.

³¹ François, LAFARGE, „Administrative Cooperation Between Member States and Implementation of EU Law”, cit., p. 597 (609).

a concrete criterion, which therefore binds the administration to a result that may turn out to be inconsistent with its mission. Conversely, referencing the abstract principle of administrative cooperation leaves the administration a greater degree of freedom in exercising its discretion.

In conclusion, it should first of all be stressed that the goal of “doing more with less” set by the Italian legislator appears difficult to achieve, especially if the legislation requires precise organizational methods and strict criteria, without an actual and factual appreciation of the real needs of each office.

Therefore, in order for the administration to strive towards a more efficient and at the same time cheaper organisational model, it seems necessary that the steering effects of laws regarding the organizational choices of administrations are limited to the legal principles upon which the choices of each administration must be made. In this way, it will then be up to each individual entity, according to its respective duties, to assess what measures and under what terms the adoption of digital tools can actually bring concrete benefits, and how.