

# **The Role of Information and Communication Technology in the Innovation of Public Administrations: Some Considerations on Managerial Aspects in the Transition from E-government to E-democracy**

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## **Abstract**

Innovation represents a process of profound change for a company, which can concern production models, characteristics of services or forms of interface with users.

There are many necessary and effective levers to guide change (for example, new service models, incentives for change, etc.), but certainly one of the most effective and available drivers is technological innovation. It is part of a wider system of levers of change, but it certainly constitutes one of the pillars, especially in this historical phase that we are experiencing.

The difficulty of innovating in depth is even more evident in public administrations, because this means changing the composition of the services and therefore of the interests primarily protected, which are the result of long consolidated processes that have taken place between the various stakeholders.

The innovation physiologically activates processes of reallocation of the public value produced and therefore reactivates the political cycle of negotiation and allocation of benefits between the parties legitimately competing with each other.

In public administrations, innovation can concern the internal services of the organization or the territory governed by the organization itself and therefore the production and consumption processes of businesses and citizens, playing a decisive role in guiding, supporting, providing economic incentives and adjustment.

The purpose of this work is to investigate the progress of managerial culture and Information and Communication Technology within the path of renewal of the Italian public administration in the transition from e-government to e-democracy.

**Keywords:** ICT, public administration, innovation, managerial culture, public company, e-government, e-democracy

**JEL Classification:** M1, M14, M140

## **1. Initial Considerations**

Innovation represents a deep change process, in a company, that can interest the production models, the features of the services or the forms of user interfaces. It is always difficult to innovate a company in depth, because of the natural tendency to recreate historical behaviours of a consolidated power

structure, a reassuring stratification of known competences, an organizational culture and a related self-representation that confers stability to the company.

Many levers are necessary and efficient to guide change (new models of service, new competences amongst workers, incentives toward change, outsourcing of some services), but, for sure, one of the most efficient and available drivers is technological innovation. It is part of a more ample system of change levers, but surely, it constitutes one of the mainstays, especially in this historical phase.

The difficulties with innovating in depth is even more evident in public administrations, because it means that they have to modify the composition of their services, and, therefore, of the primarily protected interests, which are the fruit of long historical and reciprocal adjustment processes between the stakeholders. Innovation physiologically activates processes of reallocation of public value produced and, therefore, it reactivates the political negotiation and allocation cycle of the benefits amongst the parties legitimately in competition.

In public institutions, innovation may interest internal services of the entity or of the territory governed by that entity and, therefore, the production and consumption processes of enterprises and citizens. In other terms, exemplifying on a local level, innovation may interest the Council (intended as public entity and, therefore internal innovation) or the City (territory innovation). Even in the second case, the innovation of the city, the public administration plays a decisive addressing, supporting, financial incentive and regulatory role.

Both on a comparative international level, and on an Italian level, in the course of the last twenty years, the innovation policies have been active on a system level, which is, with the higher-level coordinated entities changing the subordinate administrations. All the European Union Countries have adopted their e-government plan that indicates the investment priorities and the related objectives. The European Union itself has defined several initiatives of development support to the e-government in the member states.

Even Italy has introduced several information tools in order to ease the achievement of the simplification objectives, such as, the digital signature, the information protocol, the certified email and several services to the citizens that are, today, offered via digital platform. In 2012 a systematic development plan of the ICTs in Italian public administrations, defined Italian Digital Agenda (AGID) was approved. Even at the level of single institutions, in the last few years the importance of innovation through the technological lever has progressively increased. If, in the past, the attention was focused on information tools as simple automation support to repetitive and very structured activities, today the attention has moved toward the strategic role of the information system as a lever of total and general innovation.

## **2. Theoretical framework and Literature**

This paper is contextualized in the framework of the so-called “corporatization of the public administration”, a process that is concretized in the progressive introduction of public companies in a system of managerial, organizational and government logics of economic-corporate matrix (Anselmi, 2003). On an international level, new ideas of public management have been codified in the principles of the New Public Management first, and then in those of the Public Governance (Hood, 1991; Barzelay, 1992; Rhodes, 1996; Ferlie, Asburner, Fitzgerald, Pettigrew, 1996; Meneguzzo, 1997; Ongaro, 2002; Pollitt, Bouckaert, 2002).

There have been remarkable consequences on the front of the management of companies and public administrations: proliferation of hybrid forms between internal and external management to the advantage of private subjects (Mussari, 1995; Padovani, 2004; Mulazzani, Pozzoli, 2005), new strategies for the enhancement of the public estate heritage (Amatucci, 2012), innovative projects for the re-use of dismissed buildings and areas (Anselmi, Nicolò, Vermiglio, Valenza, 2014), computerization and web based technology exploitation to support the provision of services. Regarding this last aspect,

the literature concerning it has dwelled on the contribution Information Technology (IT) to the improvement of the management processes of public administrations.

Schedler and Scharf (Schendler, Scharf, 2001) have observed how, thanks to the advent of innovative technologies, upon which the e-government system has been consolidated, new technology-driven strategic approaches have been created. Through these processes, public companies have been able to express a potential that had to date remained secondary.

The topic of e-government has been debated both on a technological level, oriented toward the study of technologies, systems, languages and applications developed in order to favour innovative forms of interaction with the community, and on an institutional-political plane, with reference to the benefits that the new technologies might generate regarding the level of inclusion and participation of the citizen to public life (Lenk 1997; Reddick, 2005), the digital divide problem overcoming (Norris, 2001; Mossberger, Tolbert, Stansbury, 2003; Chen, Wellman, 2004; Helbig, Gil-Garcia, Ferro, 2009; Gulati, Williams, Yates, 2014), the organizational/managerial barriers in support of services and information to the community (Moon, 2002).

Other authors have remarked the role taken on by the new technologies in creating the conditions that allow the citizen to assume more control on the public services rendered by public administration (Dunleavy, Margetts, Bastow, Tinkler, 2006), as the thick network of inter-organizational relations deriving from the IT exploitation (Haveri, 2006; Osborne, 2010) and the need to redesign the provision modalities of the services, as well as the participation modality of the parties of the entire project (Pestoff, 2006; Pestoff, Osborne, Brandsen, 2006; Bovaird, 2007; Needham, 2008; Bovaird, Loffler, Downe, 2009).

It is important to notice how the research lines proposed in literature in the last few years, albeit testifying interests in the e-government, may not define themselves as consolidated and universally shared (Heeks, Bailur, 2007; Yildiz, 2007). Some empirical studies (Barnes, Vidgen, 2004; Wong, Welch, 2004) have focused on the e-government processes shaped to the use of the website as a main tool. More recent studies have highlighted the implications and impacts deriving from the adoption of e-government tools on the degree of transparency reached by the public administrations (Bearfield, Bowman, 2016), on the efficacy of the administrative adoption (Wallis, Zhao, 2017), on the quality of the internal information (Alenezi, Tarhini, Masa'deh, 2015). Cordella and Tempini (Cordella, Tempini, 2015) highlight the circumstances in which the e-government initiatives may contribute to the simplification of bureaucracy and those in which they can make it worse.

In reference to the management results of the e-government, part of the doctrine is quite critical: some authors (West, 2004) think that e-government is a missing opportunity for a radical transformation of the public administration, whereas, Norris and Reddick (Norris, Reddick, 2012) affirm that the process of adoption of the e-government technologies has not met the expectations of a radical reform, being them rather limiting changes. Most of the doctrine supports the many advantages deriving from the adoption of these technologies to support management process, since the e-government 2.0 has been establishing itself in the last few years. In relation to this, some authors (Sun, Ku, Shih, 2015) have already proposed a framework.

In more recent years, this stream of literature has found many fertile contaminations with the co-production one, which had already highlighted the importance of the involvement of the users/citizens in the production of public services (Sharp, 1980; Whitaker, 1980; Brudney, England, 1983; Levine, Fisher, 1984; Normann, 1991; Pollitt, Bouckaert, Loffler, 2007).

Some scholars (Osborne, Radnor, Stokosch, 2016; Bryson, Sancino, Benington, Sorensen, 2017) underline the importance of co-production in creating public value. Other authors (Williams, Kang, Johnson, 2016) analyse the conditions based on which, the co-production processes may destroy the public value (public value failures) instead of creating it. In some studies (Boivard, Stoker, Jones, Loeffler, Pinilla Roncancio, 2016) the mechanism of participation to co-production are deepened, concluding that results and dynamics may be different in cases of collective or individual participation. One stream of literature has deepened the potential benefits and the issues linked to the co-production

processes in relation to specific public services: for example, Wiewiora (Wiewiora, Keast, Brown, 2016) has highlighted the possible opportunities and challenges deriving from the involvement of the citizens in the co-production of services linked to public infrastructures. Some more theoretical streams, such as Howlett (Howlett, Kekez, Poocharoen, 2017) have tried to conceptualize coproduction not only as a public management tool, but also as a policy tool to the service of public companies in an interdisciplinary perspective. The doctrine has highlighted some criticality aspects: Osborne (Osborne, 2010) has affirmed that part of the literature and of the practice adopts a partial vision of the co-productive phenomenon, conceived as the integration of new elements in the provision of specific public services rather than as the innovative rethinking of the way to see the public service in general. Osborne (Osborne, 2017) highlights how the topic of co-production is still scarcely researched compared to other public management topics. This demonstrates that the phenomenon is still partly unexplored and there are no universally shared theories about it.

From this review emerges the need to deepen, through empirical studies, the impacts and the contribution of the e-government tools on the co-production processes, putting in relation these two study streams.

Osborne (Osborne, 2010) affirms, in this respect, that the e-government tools are able to stimulate and furtherly develop the co-production processes, while Margetts (Margetts, 2006) maintains that digital governance has the potential to generate a spontaneous and genuine involvement and commitment from the citizens within the provision processes of the public services. In such perspective, the e-government tools are seen as the “engine” for the enhancement of the co-production processes. The Literature review allows to affirm that, despite there have been several empirical contribution that have studied the impact of the e-government tools on the management processes (web sites, digital platforms, social networks), the studies regarding the functioning and implications, on the public administration, of the technological solutions in the perspective of the co-production of public services, result to be absent.

### **3. The Public Administration and its Information and Communication Function**

Amongst the several functions conducted by the public administration (functions of regulation of the economic system, of coordination between institutions and social actors, etc.) the one that stands out is the function of information and communication (Borgonovi, 2000).

Such function, that in the facts is realized with several forms of regulation and with the provision of services (even technologic and computerized ones) concerns an asset that has features that are very peculiar and critical to the functioning of the economic and social system.

The information and their elaboration in knowledge that is useful to the decisions and the actions, cover a role that is fundamental to the financial markets (for example, the information on the quarterly results of a company or on the trend provided for the GDP), in the protection of people’s privacy (in this case in terms of circulation of sensible information). However, at the same time, they are useful in crime fighting activities, in consumers’ protection and for the opportunities that are offered by the public administration entities.

The acquisition and management of the information has become so important in the social and economic life, and it presents such problems in its management through the market, that the public institutions are called to define rules and to provide services that ease the spreading of information that are relevant for the improvement of production and consumption processes, including those of financial nature.

In affirming this new role of the public administration, information and communication technologies assume a growing importance, since they may represent the tool through which the entities support the coordination of the management of the activities through the several subjects involved in the provision of the service, stimulating the accountability through information transparency.

In particular, ICTs have contributed to modify, in a radical way, the access to information, as well as the space-time borders between individuals and public institutions (Pollifroni, 2003).

This progressive convergence of the change objectives of the public sector with the introduction of new technologies having the characteristics of making transparent and shared the information and of reducing the communication times has been defined e-government (Borgonovi, 2002; Capocchi, 2002; Comite, 2012; Di maio, 2001; Holmes, 2001; Marasso, 2001; Zulfiqar, Pan, Lee, Huang, 2001)<sup>1</sup>.

#### 4. Public Sector, Transparency and its Implications

The reforms in the public sector, which have widely involved several spheres of daily life, register the progressive growth of the autonomy of the single organizations, enhancing the function of management, its autonomy and the attribution of the related responsibilities, the introduction of new methodologies, managerial tools, evaluation and accountability measurement systems. The reforms have emphasized the aspect of responsibility, of having to account for the results obtained, which is reinforced in case the resources used are not owned (Matacena, 2002).

In this context, we have seen an attempt to create a system of almost-markets to stimulate competition and benchmarking through the activation of virtuous evaluation, accountability and social reporting paths, as well as of an enhanced information access.

The study of the literature takes into consideration the concept of transparency, linked to the information regarding the employment of resources and the results obtained, and proposes a summary of the definition found in the academic sphere and of the implications that transparency has regarding accountability and performance. Most of the definitions recognize that transparency is related to the degree to which an organization reveals information related to its own decision-making processes, to its own procedures, to its own functioning, to the use of resources, to the efficacy and efficiency in providing services, to the reporting of results and to the impacts of the administrative activity (Mussari, 1997; Welch, Wong, 2001; Anessi pessina, 2002; Steccolini, Marcuccio, 2005; Curtin, Meijer, 2006). Hood (Hood, 2010), for example, defines transparency as *“the conduct of business in a fashion that makes decisions, rules and other information visible from outside”*, whereas Armstrong (Armstrong, 2005) associates it to an *“unfettered access by the public to timely and reliable information on decisions and performance in the public sector”*. Other authors (Grimmenlikhuijsen, Welch, 2012) define transparency as the *“disclosure of information by an organization that enables external actors to monitor and assess its internal workings and performance”*. According to Bartocci and Guarini

<sup>1</sup> In literature e-government is defined as: a) the group of techniques for the employment of ICT methods and tools meant to facilitate the internal and external relations to public administration on all levels of the exercise of its government activities; b) the process of transformation of the internal and external relations of the public administration, through network, information technology and communication activities, so as to optimise the service provision, increment the participation of the citizens and of the enterprises, and to improve the ability to govern c) the process of implementation, within the public sector, of ICT technologies for the realization of an organizational, management, informative, computerized and relational system of a reticular type, reflecting the e-business model developed in the public sector. Some distinguish between the static definition (what is done) an dynamic definition (why it is done): the first one is intended as the provision of government services with the support of ICT technologies, whereas the second one corresponds with the process of transformation in the internal and external relations in the public sector to optimize the features of the service provided and the participation of the citizens. The definitions analysed so far have taken into account two scopes of application: 1) the increase of internal efficiency in public administration and the improvement of the external relations, 2) the medium-long term objectives. There are other definitions, instead, that propose a more ample vision of electronic government, such as the process that implies a complex and dynamic transformation of the whole state establishment, at any level, that exploits ICT in order to involve it in sharing information and strategies with citizens, enterprises, administrations and governments – even external ones- as well as public administration employees. Still, in its more ample sense, the electronic government may be intended as the pursuit of modernization objectives of the public administration even through a strategic employment of ICTs: a) within the single administrations (inter-administrations back office), b) in the relation between the different public administrations (inter administration back office) c) in the relations between administrations, citizens and enterprises (front-office).

(Bartocci, 2003; Guarini, 2008), public administration is called to report to society regarding its own actions and results in a transparent and exhaustive way, opening itself toward the public through communication policies based on transparency (disclosure). Furthermore, Kopits and Craig (Kopits, Craig, 1998) affirm that transparency requires the possibility to quickly access “*a reliable, comprehensive, timely, understandable, and internationally comparable information (...)*”. Finally, OCSE (OECD, 2002) defines transparency as “*the capacity of regulated entities to identify, understand and express views on their obligations under the rule of law*”, and affirms that “*the access to information, consultation and active participation in policy-making contributes to good governance by fostering greater transparency in policymaking, more accountability through direct public scrutiny and oversight*”, therefore arriving to intend transparency as the intermediate result of the correct application of the three explained dimensions. According to OCSE, the availability of the information exposed to public control represent a necessary condition in order to respond to the needs of the subject involved in the activity of the public administration. Furthermore, even the inclusivity would lead back to the extent to which the government is transparent, accessible, and reactive toward all subjects. (the more evident the passage from the mere transparency to inclusivity, the higher the degree of openness and accountability in the public administration). Regarding the access to information, OCSE (OECD, 2001) has identified some structural pre-conditions, such as the presence of a legislation in matter of the rights to information and transparency, of the definition of the institutional mechanisms able to guide the tangible application of interventions to support higher transparency and information, of the existence of self-sufficient autonomous control structures (ex. Supervisory boards). Other authors have tried to also identify possible incentives in order to increase disclosure for information purposes (Luder, 1992; Fisher, Laswad, Oyelere, 2005), identifying some categories of possible incentives (political, financial, social, institutional or administrative). The literature has also highlighted the strict link between transparency, good governance, accountability and performance under many aspects. In the first place, transparency is seen as an incentive factor of the “good governance” since it is supposed to contribute to:

- better use of resources (with the consequent improvement of the achieved outcomes), encouraging the continuous performance improvement (Hood, 2006);
- modification of power relations, since it hinders self-referentiality and makes it more difficult to use information as a source of power (Hinna, Meneguzzo, Mussari, Decastri, 2012);
- “social legitimation” and the reduction of the corruption rate (Meijer, 2009), increasing the level of trust and the perception of integrity toward the public administration (Campbell, 2003; Curtin, Meijer, 2006; Tolbert, Mossberger, 2006; Osimo, 2008; Cook, Jacobs, Kim, 2010). To this purpose, Heald (Heald, 2006) affirms that there exists a triangular relationship between transparency, openness and surveillance and it arrives to observe that transparency might substitute accountability, in case an open democracy is realized, that is, when the public control is exercised directly from the citizen.

In second place, transparency is a primary condition of accountability (intended as availability and access to useful actions meant to satisfy the knowledge needs of the interested subjects), and it needs the path toward accountability to be developed around the frameworks on which a judgement on added value is requested (Meijer, 2003; Guarini, 2008). According to Hood (Hood, 2010), indeed, accountability is intended as answerability, that is, as the ability of the public administration to respond, that implies the sharing of information with those required to be accountable, whereas transparency is intended as opening, that is, as the way to account for one’s own conduct, whether it is an individual or an organization. Accountability expresses, therefore, an informative responsibility, and it substantiates in that “*system of communications, both internal and external, that, within transparency and result control find their full conformation*” (Matacena, 2002). This means that, through accountability is realized the control power on the results of the activities of those who will bear the effect of them.

Transparency and access to the information regarding the processes and the results represent key principles of performance and of the relations between performance and accountability (Piotrowski, Rosenbloom, 2002; Dubnick, 2005), because, if the government processes (and their related results) are not transparent, the fundament of accountability is dropped (Bovens, 2007). The strategies of the New Public Management for the measurement and improvement of performance imply the introduction of new concepts and tools such as benchmarking and the identification of the best practice for the comparison of performances between entities (Montesinos, Brusca, 2009), which are possible only if there are information to be compared. The publication of the data related to performance is, therefore, in literature, conventionally considered useful to its improvement, since it allows the control and the comparison of it; also, in many contexts, it is perceived as a right (Stan, 2007; Talbot, 2007), even if the contribution deriving from it is not clear (Tillema, 2010) and there are many authors that maintain that the excesses of transparency do not necessarily need to positive results (Hood, Heald, 2006; Bannister, Connolly, 2011).

On the basis of the researches conducted by Meijer (Meijer, 2012) and of the definitions stated above, we may then intend transparency as an institutional relation between a subject of the social-economic system, that opens up to another subject, whom, in this way, is able to monitor the first, relatively to the input used for the production and service provision processes, to the output and the outcomes deriving from such activities, and, finally, concerning the way in which the public administration reaches the results in terms of decision-making and transformation/provision processes.

## **5. The evolutionary Path of e-Government: Openness**

The e-government represents one of the most important reform paths pursued by the public administrations to the purpose of raising transparency and increasing the participation of the citizens (Garcia-Sánchez, Cuadraro Ballesteros, Frias Aceituno, 2012). It positively influences the efficacy of the government action, but its diffusion does not seem to depend on the wealth of the Countries that adopt it (Garcia-Sánchez, Cuadraro Ballesteros, Frias Aceituno, 2012). The open government, or openness, characterized by principles of transparency, participation and cooperation, represents the last phase of the evolutionary path of the e-government.

To define the e-government it is possible to take approaches that focus on different aspects (Yildiz, 2007). In some cases, the aspect of the recourse to the internet is emphasized, as a mean to transmit information and provide services to the citizen (United Nations, Aspa, 2002), sometimes is emphasized the recourse to databases and automation and traceability means (Jaeger, 2003). In other approaches is emphasized the possibility to establish relational processes between public administrations, suppliers and citizens, thanks to the recourse to new technologies (Means, Schneider, 2000) and three main categories of relations are identified: Government to Government, (G2G), Government to Citizen (G2C) and Government to Business (G2B) (Jeong, 2007). Other studies focus their attention on a development path of the e-government characterized by growing levels of organizational and technological complexity (Layne, lee, 2001; Howard, 2001; United Nations, Aspa, 2002). The first level of introduction of the e-government is characterized by the digital presence, that is, the presence of simple information on the public administrations web sites; the information are transferred from paper to digital, but the relation between public administration and citizens remains unidirectional. In increasing the recourse to e-government processes, the public administrations recur to technologies that allow the conduction of transactions and, subsequently, realize “horizontal” processes of inter-organizational cooperation aimed at the sharing of databases and provision of services thanks to portals that are open even in the relation with the citizens. These development stages, as all social-organizational processes, do not follow a linear trend, and are affected by the context diversity. However, the direction toward which the e-government process seems to move, underlined by its development phases, is that of openness, or open government. Openness is set as the last stage of the e-government path.

The American guideline on open government, which codifies the principles of the open philosophy within the institutions and the public administrations, defines the open format of the public data as an independent aspect compared to the platform, easy to read for the calculator and made available to the public without the reuse of the transmitted information being impeded. The data themselves have no relational features: they are cold. They simply are data, not usable singularly, but only by grouping them in order to extrapolate value from their relations. In order to make the data available, it is necessary to educate to sharing and to overcome the so-called “database embrace syndrome”, that is, the difficulty felt by the owners of the data in letting them go and in making them available to be reused (Formez, 2011). Open data is a means to favour the realization of sharing and participation processes that correspond to the last phase of the evolutionary journey of the e-government. It is not enough to make the data available, but it is important to stimulate their reuse, encouraging the citizens to create applications by triggering civil hacking phenomena.

In Italy, the Legislator, intervening with several provisions, has decided to enhance and make available the information produced in the public sector. Lgs.D. 36/2006 has accepted the European guideline 2003/98 on the Public Sector Information regulating the modality of re-use of the documents containing public data. The Digital Administration Code (CAD) (Lgs.D. 82/2005) has provided that ... “ *the public administrations, in order to enhance and make available public data they own, promote projects of elaboration ad spreading of these data even through the use of project finance tools, using open format that allow their reuse*” (art. 52. par 1-bis).

With the subsequent reform of the Digital Administration Code (Lgs. D. 235/2010) the open data doctrine has been expressly accepted, urging the administrations to open to the public their information storage. The Development Decree 2012 has established the Agency for a Digital Italy (AGID) with the task to elaborate the addresses, the technical rules and the guidelines for the full interoperability and application cooperation amongst the information systems of the public administrations, as well as the European Union systems (Formez, 2011).

### **5.1. The Principles of Openness**

While initially openness, as an element of qualification of the e-government processes, seemed to elude any definition framework or any concrete references in terms of contents and paths to activate, more recently it seems to be attributable to more codifying factors. It finds proper application in the principles of transparency, public participation and collaboration (Von Hippe, 2005; Chesbrough, 2006; Tapscott, Williams, Herman, 2008; Di Donato, 2010; Lathrop, Ruma, 2010; Belisario, Cogo, Epifani, Forghieri, 2011; Formez, 2011; Lee, Kwa, 2011).

The principle of transparency consists in the spreading of the information regarding the activities of the public administrations. To distribute public data in an open format free from restrictions, both from the point of view of the access and that of integration and reuse, represents the basic prerequisite in order to develop a real collaboration process between institutions and community, regarding the choices of the government, so that the available data can be elaborated in a new form (Formez, 2011). Transparency commits the administrations to adopt provisions that allow the rapid diffusion of the information in forms that are easy to find, on line, and usable, that is in open formats. It makes so that the administration solicit feedback from users, to be able to primarily spread information deemed useful by the users (Hood, 2007; Fioretti, 2010; Darbshire, 2011).

Resolution Civit n°105/2010 introduces and regulates the principle of transparency intended as total accessibility (...) *of the information concerning every aspect of the organization* (article 11, par. 1). Total accessibility entails the usability, for the community, of all the public information, according to the paradigm of the freedom of information of the open government originated in the States.

The principle of participation supports the importance of the involvement of all citizens in the decision-making processes. According to this principle, the citizens must be able to give their contribution to the choices of the public administrations, making available information and collective competences. Therefore, public administrations are urged to involve the citizens in the definition of modalities that increase and improve the opportunity to participate (Fung, 2006; Pollitt, 2006;



Storlazzi, 2006; Bonabeau, 2009; James, 2010; Lee, Chang, Berry, 2011). This aspect stimulates and eases the citizens toward a continuous control over the operations and the decision-making processes of the institutional subjects (Formez, 2011). Through strategies of openness of the data, the citizens are no longer the passive consumers of information provided by the administrations. They obtain the opportunity to reuse and integrate the data made available to them, up to developing services and applications to the advantage of the entire users' community, which go side by side with those created centrally by the institutions. In this way, the citizens effectively cooperate with the institutional subjects and actively participate in the actions of government (Formez, 2011).

The principle of cooperation affirms that the public administrations must use innovative tools and methods finalized to the improvement of the collaboration, both between the different levels of the public administrations, and between public administrations, non-profit organizations, enterprises and private citizen. In this respect, the attention is focused on the concept of co-production, which entails a provision of services characterized by a high level of involvement of the user. To review the efficacy and the efficiency of the public administrations in terms of co-production, implies that the users, being them the waivers of knowledge and competence, are directly involved in the provision of services, and that the quality of the public service is monitored during the entire process, rather than being measured only at the end (Agranoff, Mc Guire, 2004; Cooper, Bryer, Meek, 2006; McAfee, 2009; Mele, Musari, 2009; Emerson, Nabatchi, Balogh, 2010; Johnston, Hicksy, Nanz, Auer, 2010).

In the European framework, the principles of transparency, of participation and collaboration are present in the e-government plan. The Ministers of the European Union responsible for the e-government strategies have received the openness guidelines. These guidelines are: a) the development of user-centric services that favour the interaction between citizens and public administrations; b) the involvement of the civil society in the initiatives; c) the increase of the availability of the Public Sector Information (PSI) to incentive the reuse; d) the enhancement of transparency in the administrative processes; e) the promotion of active participation (Reddick, 2005).

## **6. From e-Government to e-Democracy**

The growing recourse of the public administration to information technologies to favour the participation of the citizens, and their effective influence on the public decisions has brought to the development of a research field called Democratic e-governance (Anttiroiko, 2007).

In such framework, it is important to distinguish three key concepts that are related and that allow to highlight the different modalities of employment of the ITs within the public administration: 1) e-government; 2) e-governance; 3) e-democracy (Anttiroiko, 2007).

The first term, e-government, refers to all those political-administrative operations conducted by the public administrations with recourse to IT. The activities within this dimension can be recapped as follows (Heeks, 1999):

- e-administration, which consists in the improvement of the processes conducted by the public administration through a reduction of the costs and an improvement of the performance;
- e-citizens, that refers to all those activities created by the public administration to favour the consultation with the citizen;
- e-services, which recalls for the improvement in the provision of the services to the citizens with recourse to online systems;
- e-society, that deals with all the public administration activities that are conducted outside the entity and that are meant to create links with the entire community.

In other words, the objective of the e-government is to grant the citizen a higher accessibility to the services to the public administration and a better response to their needs.

The concept of e-governance, instead, concerns the development, through IT, of many types of relations with the stakeholders meant to favour the realization of the typical public administration

functions, such as, the provision of the services or the conduction of public policies. The objective, in this case, is to favour the relations between public administration and stakeholders. Finally, the term e-democracy refers to the democratic structures and the deliberative democracy process in which the ITs are employed.

There are three different types of theories in the area of e-democracy; the main difference is given by the fact that the e-democracy theories put at the centre of their arguments the support offered from the Information Technologies and how these favour the process of democratization of the decisions (Floreddu, Cabiddu, Pettinao, 2011). The first is the so-called representative democracy, that emphasises the recourse to participation tools such as the e-voting (Lourenco, Costa, 2006) in the elections, and the employment, in general, of the new media in the political and election processes. Another theory is that of participative democracy (Macintosh, 2004), strictly linked to the concept of deliberative democracy that emphasizes the recourse to tool apt to favour the participation of the citizens through the recourse to Information technologies. In this setting, we refer, in particular, to tools such as the electronic consultation of the citizens (e-consultation), the online juries of citizens (e-citizens' juries), the online petitions (e-petition) and so on. The last one is the so-called direct democracy (Becker, 1981; Becker, 2001), which represents the most radical form of democracy and emphasizes the recourse to the online referenda (e-referenda).

The three theories enunciated are strictly interrelated and present overlapping areas. It is, in fact, quite difficult to trace their boundaries. Each one of them, for some aspect, may be included in one of the other two categories.

Only an integration of the three theories can provide valid tools to evaluate this concept adequately.

## **7. Final Considerations**

The scenario in which the public administration operates, and more in general today is society, has become extremely dynamic and variable. The technologic evolution follows an exponential process in which the digital revolution is one of the more recent steps, by now considered an industrially obligated standard. This process follows such a fast and vast growth that, while our grandparents and their parents shared in a substantially similar way, with few significant exceptions (such as the advent of television, flights, cars and so on and so forth), the parents of today's children are experiencing some technologic evolutions that come to life and then disappear within a generation, as it has been for videotapes and compact discs, too. Within a few years, there come new possibilities, now scenarios that cannot even be imagine ten years earlier. Subjects such as network cooperation in real time, cloud archiving, global sharing of data and calculation resources, use of artificial intelligence in the scientific and commercial field or simply as an informative help to the citizens, new possibilities of employment of augmented reality for the improvement of safety in the industrial operational realities, document and process management systems, such as those granted by the block chain technology, and many other aspects, are becoming remarkable paradigms, that we are not sure will not be overcome in a few years by even more surprising innovations.

This transformation must be intended not only as technological innovation, but also as real and pervasive simplification, ease and acceleration of the processes necessary to the optima management of the public affairs and of the relation of the citizens with them, backing the efficiency and the efficacy of the support that the available technology can give, but aiming also to substantially review the present operational modalities and, most of all, the responsibilities and competences that are needed in order to deeply revive the activities of the State and of the local entities, so that they are adequate to the evolving scenario.

Today, digital innovation is not a choice, but it is part of our professional and private lives, whether we like it or not and this is the concept we need to start from.

We can affirm that today, the civility of a Country can be measured even by the degree of digitalization reached.

In conclusion, there are topics on which there is either teamwork or loss. The digital topic is one of them.

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