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«They say things are happening at the border, but nobody knows which border» (Mark Strand)

Managerial governance and transparency in public sector to improve services for citizens and companies

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Abstract: Recent debate and associated initiatives dealing with public sector innovation have mainly aimed at improving the effectiveness and efficiency of the delivery of public services and improved transparency and user friendliness. Beyond typical administrative reforms, innovation is expected to help address societal challenges such as the aging population, inclusion, health care, education, public safety, environment and greenhouse gas emissions reduction. The public sector consists of a complex open system of organizations with various tasks. Therefore, decision-making can be slower than in the private sector because of large chains of command. Innovations here will often have an impact across this complex organizational structure, and thus must be supported by a robust strategy. To strengthen democracy, promote government efficiency and effectiveness, discourage wastes and misuses of government resources, public administrations have to promote a new stronger level of openness in government. The purpose of this manuscript is to describe an innovative approach for the governance of public systems and services, currently applied in the Italian public administration domain, which could be easily replicated in other countries as well. Two initiatives, to collect and provide relevant public information gathered from different and heterogeneous public organizations, to improve government processes and increase quality of services for citizens and companies, are described. The cases adopted have been validated through a case analysis approach involving the Italian Agency for the public administration digitalization to understand new e-government scenarios within the context of governmental reforms heavily influenced by the principles of Open Government Model.

Summary: 1. Introduction. – 2. Strategic principles for e-government. – 3. The importance of data transparency for citizens and companies. – 4. Leadership influences motivation. – 5. Managing effectively open government and online services. – 6. Conclusions.

1. Public services are among the most knowledge-intensive and value added of all sectors, and thus obviously also need to be part of this mobilisation. Public services and public administration represent a significant part of the European socioeconomic activity. Europe's public services account for between 40% and 55% of GDP – compared to 32% in the United States, 26% in Japan, 16% in China or 17% in India. Public services-related employment accounts for between one quarter and one third of the total EU working-age population, and public employment (civil servants) represents more than 15% of the total employment in the EU [24]. In last two decades, the public administration sector has been affected by several deep and radical changes. In this period, different approaches to the government of public life and services emerged.

Openness can make a democracy stronger in several ways. Where citizens can observe the workings of government, they become more invested in what government does. Government openness empowers citizens as well, as they are more able to express their views about policy decisions that affect them. Openness makes democracy stronger also by encouraging government officials to perform better, for where government is more open, they are more likely to be held accountable for their decisions, both good and bad. Similarly, a more open government makes it easier for the media and watchdog groups to expose, and therefore deter, improper or otherwise undesirable influences on policymakers. In short, openness enhances democracy by giving citizens a greater voice in what government does, and promoting government action that advances the interests of all, not just a privileged few. Openness promotes a more efficient and effective government too. When government is more open, bad ideas more readily yield to good ideas. After all, not all expertise resides within government. These were the New Public Management [1, 2, 3], the New Public Governance [4, 5, 6] and, last but not least, the Open Government Model [7, 8, 9]. All of these approaches have contributed in different ways to manage the large complexity of the public sector. This means that public administration is constantly looking for ways to improve its performance. Inside this wave of changes, new approaches and forms of knowledge management systems are gaining predominance in the public sector scenario. Now the challenge is how to organize a proactive disclosure so that information can easily be found by users. New technological opportunities and the increasing information demand make it imperative for public authorities. The open access to public information and data can be a powerful approach to support a reorganization of public services, a real innovation and achieve well-motivated civil servants. Therefore, the easy and immediate access to public information can be a significant driver of economic growth to obtain new services and applications [23]. The first objective of this paper is to present a model to assess the open government initiatives: Open Government Implementation Model (OGIM) [9]. The main idea of this model is to adopt a tool to organize and classify open government efforts. This model is focused on the outcomes, specifically on the open government websites and on open

government development path. According to this idea, a first step to develop and evaluate Open Government could be the user's perspective, that it is a precondition for implementing the following steps. We analyse some Italian and international experiences related to central transparency web portals, to describe the benefits and complaints of open data around openness. Then the paper focus on a case study of public knowledge management systems, that can bring many advantages to provide relevant public information and produce inside the public administrations involved in a processes' reorganization and, in general, in better performance goal.

2. The development of ICT and the information society has created a vast variety of potential applications for the public sector. The resulting notion of e-government encompasses applications that aim variously at:

- Pushing information over the Internet;
- Communicating between public agencies and citizens, business or other government agencies;
- Conducting transactions and registration;
- Improving governance and direct democracy (online consultation, petitioning, polling, voting, and campaigning).

One goal of e-government is greater citizen empowerment. Through the Internet, people from all over a country / region / locality should be able to interact with policy-makers and make their voices heard. In addition, these technologies should create more transparent governments and administrations [24]. E-government can play an essential role in revealing to the public the policies governments are adopting or the actions policy-makers are taking. The spread of Web 2.0 technologies based on social networking allows us to create genuinely new kinds of connections between citizens and the public sector. Government 2.0 goes far beyond merely adopting Web 2.0 tools for the public sector as it is a philosophy and culture that reflects society's radically new way of interacting and communicating. The cost of implementing new working processes into existing organisations is also often underestimated. For example, the resources required for Web 2.0 type policy and decision-making is often underestimated. In particular, in terms of the facilitation, tailoring of information, monitoring, moderation, feedback to participating citizens and stakeholders required to ensure value-adding and successful ePetitions, eConsultations etc. Public services could even become a comparative advantage for Europe competitiveness, by creating innovation-conducive environments. World challenges such as demographic change, pollution, and security concerns are creating new demands for public services, and the public sector may be a strong driver for EU leadership in these domains too [24]. Statistics indicate that the demand for public services in many advanced countries is growing faster than the rest of the economy – even before the onset of the recent economic crisis. As the GDP is increasing more slowly than public expenditures, the public sector is subject to major budget constraints – and the economic crisis exacerbates this. Meanwhile public services are facing higher expectations from their users (especially e-government services) [24]. Hence, innovation is vital for increasing public sector efficiency (value for money, more for less) and for delivering new and better quality services. As mentioned, some of these services affecting the whole economy or key sectors within it, as well as being important for quality of life more generally. It is possible to summarize six principles related to the potential of e-government:

1. Innovative services and their online delivering can improve the public sector role to surpass definitely the economic crisis;
2. Citizens and businesses have to be really at the centre of public services;
3. Public services should be delivered through the most appropriate channels;
4. E-government should reduce the administrative burden for citizens and businesses;
5. E-government projects should reflect business process improvements, delivering demonstrable efficiency, effectiveness and value for money gains;
6. Public bodies should understand and ensure that the online channel is the most effective and attractive option for the services delivering.

Impacts and benefits can be monetary or non-monetary for both the public service customer and the public service provider [24]. Measureable impacts and benefits have to be reported to ensure value for money. Mechanisms will be put in place, including the use of social media, to get feedback from citizens and businesses on e-government services [35, 36].

3. Governmental organizations manage several kinds of data during their daily activities [23]. All these data are used by government functions but they could also be handy for citizens and other actors in society. In many countries, the public data are now being viewed not as private government property, but as public assets to be leveraged by citizens, businesses and experts' communities. Actually many of these organizations currently are reviewing and rearranging their processes, information and data to improve policies, services, enhance legitimacy and openness toward outside parties and citizens. The development of web portals and search services to support citizens and business companies in finding information and e-services in the Public Administrations' websites is a very challenging organizational issue. Indeed, over the latest years the number of PAs digital services, mainly on the web channel, and of sources of e-government data [18] increased at an impressive rate. By merely considering Italian Public administrations, there is an estimated number of about 50.000 websites, with millions of pages. Digital public services can be defined as the view of public entities (and their services) in the virtual world (web, social networks, e-mail channels, mobile devices, etc.) and is the result of the work of thousands of autonomous (public) entities organised in a sort of huge federated enterprise. In this context, many countries are developing their strategic plans for Open Government initiatives launching pilot portal that manage the knowledge published over the Internet by public administration on a national scale to support stakeholders in finding the information they need within the digital public administration. The search.usa.gov site provides a notable example of this kind of portal: it provides an interface, which allows performing traditional keyword-based search queries with a simple and easy interface. Search.usa.gov integrates the web search service provided by means of a well-known public search service with other specialised search services, such as, for example, the recall search service, which

makes it possible to find recall announcements (i.e. request returns of a product to the manufacturer, for necessary repairs or adjustments) published on several governmental websites [23]. Transparency and open data can be powerful tools to stimulate and support public services' improvements, faster innovation and empower citizens' rights. The easiness and the immediate access to relevant public information, government processes and better performance can be a significant driver, with open data increasingly enabling the creation of valuable new services and applications [16, 17]. It is important to differentiate between "access" and "availability" from the users point of view – because for example a technical system might be available for citizens to use –but some citizens might not be able to use it due to specific circumstances – e.g. people on benefits could have access to internet based applications and payment, they might even have access to Internet – for example by using computers made available to unemployed people in community centres, etc. However to get state benefits via the eGovernment system the citizen might need to have a bank account – in UK case it turned out that many people on state benefits did not have any bank account for the simple reason that the banks do not want to give people who have no jobs an account. Until the new eGovernment system was put in place all these people on state benefits were able to get their money via the Post Office with the use of a personal post check. With the new system, the checks were not used anymore as no one had considered that there were (adult) citizens in the UK who could not get a bank account. So here is an example of people having access and some availability – but the actual availability of the service is not truly possibly to realize and so the intended benefits were not achievable – even if the technical system was developed on time. On budget and within specification – "and" the availability issue had been addressed – still this was not enough. The reasons for "failure" are not within the "functional specification" and also not within the "structural problem space" but instead the problems are completely within the space of the human activity system. To better understand Table 1 it identifies a sequence of monetary (economically quantifiable) and non-monetary (not economically quantifiable) benefits and threats not only for business and citizens users, but also for the public administration itself [33].

Impacts inside the public administration			
<i>Benefits</i>		<i>Threats</i>	
<i>Monetary</i>	<i>Non-Monetary</i>	<i>Monetary</i>	<i>Non-Monetary</i>
Publication of government data possible at low cost	Cultural shift to openness begins	Improved data quality: accuracy, consistency and regular updating	Cultural shift to openness
Reduced cost and time to develop new services	Foundation for performance improvement	Focus on high-value and high-impact data such as costs and performances	Cooperation agreements between government agencies
	Foundation for value-added online services	Investing in the right data analysis software	Data management responsibility
	The public is engaged through data	Integrating several data from government websites and databases to fine-tune and increase effectiveness	Data stored in government websites in compatible formats
	Increased customer satisfaction	Feedback on the data usefulness and quality	Reduced processing time
	Empowerment of the procedures	Fight to frauds by combining and analysing social and financial data	
		Proper resources committed to setting up or expanding proactive disclosure	

Table 1. An elaboration of benefits and threats of data transparency inside the P.A.

Internet enables public organizations to connect datasets to their portals and enable stakeholders (citizens, companies and communities) to improve transparency (see Table 2) have access to several data in a wide variety of ways [23]. Broadband networks and mobile technologies are also facilitating the gathering of public data. Every government operation generates new data, which can be useful for stakeholders. The free movement of information within a digital society offers immediate, practical benefits and the promise of future opportunities that are yet unseen [33]. In an information-driven age, the ability of government leaders to realize the opportunities presented by unlocking public data may ultimately spell the difference between success and failure [23].

Impacts outside the public administration			
<i>Benefits</i>		<i>Threats</i>	
<i>Monetary</i>	<i>Non-Monetary</i>	<i>Monetary</i>	<i>Non-Monetary</i>
Reduced cost and time for innovation	Increased public awareness and knowledge of data, process, and policy	Digital divide	Privacy
Public data usage by businesses for investment decisions	Increased government accountability	Time to develop new applications and services	Cultural shift to openness begins
Material resource saving (e.g. paper)	Easiness of compliance to access and manipulate data		
Improved economies	Speed		
Potential reduction of fees	Certainty of decisions		
	Empower citizens		

Table 2. An elaboration of benefits and threats of data transparency outside the P.A.

4. Openness likewise discourages waste and misuse of government resources by revealing where scarce government resources are used to poor procedure, open government promotes the efficient reallocation of those resources. In turn, a more democratic and efficacious government improves the lives of its citizens. Information provided by government can help inform the electorate. Information from federal agencies can help the public make more informed choices about daily decisions, from the choice of consumer products to decisions affecting their health, housing, and transportation concerns. In addition, this is the true test: a more democratic and effective government is one that truly improves the well-being of those whom government is supposed to serve. By making open government a high priority, the administration has sought to improve the everyday lives of citizens more inclusively, more effectively, and more economically. Profound changes in the nature of technology, demographics, politics and the global economy are giving rise to new model of democratic government. We are entering a new age in which citizens take part in service delivery, decision making and policy making like never before. The steadily improving quality of information and communication technologies (ICT) has changed not only the daily lives of people, but also the interactions between governments and citizens. The e-government has started as a new form of public organization that supports and redefines the existing new information, communication and transaction-related interactions with stakeholders (e.g., citizens and companies) with the purpose of improving government performance and processes [10]. Today the public administration must move beyond e-government to forge governance webs capable of meeting rising expectations for openness, accountability, effectiveness and efficiency in the public sector. The transition to "Open Government" begins with opening up formerly closed processes, embracing transparency and renovating tired rules that inhibit innovation [11, 9, 12, 13]. The "Open government initiative" of US federal government [14] is based on the implementation of three principles for a government: transparency, participation, and collaboration. Transparency promotes accountability by providing the public with information about what the Government is doing. Participation allows people to contribute ideas and expertise so that they can make policies with the benefit of information that is widely distributed. Collaboration improves the effectiveness of Government by encouraging partnerships and cooperation within different levels of government, and between the Government and private institutions. Placing the principles of Open Government within the current public administration context in which are inserted, it is useful to observe that, the open access to information and data, can transform deeply the idea of public government. In this way, functional data silos and distinction between "inside" and "outside" will disappear. "Government as a platform", is the idea of the government data becoming feasible and accessible to citizens through information systems [7]. The general vision of Open Government Implementation Model [9] supposes that the use of information and communication technologies (ICT) can enhance efficiency, policy effectiveness, service quality, accountability and democratic value in public sector. OGIM model is a new paradigm in public administration that needs of four specific implementation stages: increasing data transparency, improving open participation, enhancing open collaboration, realizing ubiquitous engagement (figure 1). The main key point of OGIM model is that public authorities should advance their open government initiatives gradually, focusing on one implementation stage at a time. Besides data transparency [15] is a required precondition and an enabler for implementing better services in each phase. One important aspect of innovation management is the rationale or motivation for innovation. It has often been argued that the lack of competition (to drive organisations) and limited financial incentives for improvement (to drive individuals) would hinder innovation within the public sector. It has however been demonstrated that there can be many sources of motivation for innovation. The Table 3 indicates the differences (and similarities) in the importance of motivation between the two sectors [24].

<p>Motivations for innovation in the public sector /Individuals</p> <ul style="list-style-type: none"> o Career o Idealism o Professional recognition o Power o Self-fulfilment o Money (salary) o Prestige o Potential for spin-off business 	<p>Motivations for innovation in the private sector /Individuals</p> <ul style="list-style-type: none"> o Money (salary, profits, bonuses) o Career o Self-fulfilment o Prestige o Power o Job security (via enhanced profitability or imposed requirement) o Idealism
<p>Motivations for innovation in the public sector /Organizations</p> <ul style="list-style-type: none"> o The propagation of a policy, idea or rationality o Increased funding o Problem solving (in order to reach objectives) o More staff o Public relations 	<p>Motivations for innovation in the private sector /Organizations</p> <ul style="list-style-type: none"> o Profits o Problem solving (in order to reach objectives) o Pre-empt competition o Market-shares o Growth (in size) o Public relations

Table 3. The motivation in public and private sector (Miles & Røste, 2005).

It is important to understand that if evaluation of benefits is made from a "functional" perspective – qualitative benefits will not only be invisible but impossible to identify – and this means they will not be achievable, as failure to address them will not be

directly linked to the experience of failure and success. In addition “structural” evaluation of benefits will not be able to see failure and success for what it is in the context of real world socio-cultural experience of citizens – as a structural evaluation has similar weaknesses as hard systems thinking [37]. So if we wish to be able to not only promote qualitative benefits, we need to incorporate a systems view which is treating the eGovernment projects as “human activity systems” or else we will be blind by the IT functionality and the data and object structures and so will not be able to manage or achieve intended real world benefits.

Recent debate and associated initiatives dealing with public sector innovation have mainly aimed at improving the effectiveness and efficiency of the delivery of public services and improved transparency and user friendliness [24]. Beyond typical administrative reforms, innovation is expected to help address societal challenges such as the aging population, inclusion, health care, education, public safety, environment and greenhouse gas emissions reduction. The public sector consists of a complex open system of organizations with various tasks. Therefore, decision-making can be slower than in the private sector because of large chains of command [24]. It is widely reported that without licence from the top, few people in hierarchical organisations are willing to take risks [37]. Political and official leaders can establish a culture in which innovation has seen as natural. Several writers thus see leadership as a key link between individual creativity and knowledge and organizational innovation [39]. Leadership should come from the highest level, but middle management can also be very important. Leaders need to dedicate resources to innovation and to act on employee suggestions. They should also protect innovative employees from internal and external critics and at the same time convince politicians of the need for innovation.

5. According to the most public directives implementing transparency and open government plans, it is important to do not preclude the legitimate protection of information whose release would threaten national security, overrun personal privacy, breach disclosure, or damage other honourably compelling interests. In the same time, managing public knowledge and extract info from tens of thousands of data sources is a challenging task [37]. Our aim is the study of the possibility of designing an economically viable information system able to manage the knowledge in open data and over the Internet by public administrations on a national scale. The approach we are following is based on the following operating steps [19]:

- the knowledge base is built starting from the contents of centralized (institutional) sources of data;
- the institutional data are the basic to develop ad hoc solutions to discovery, analyse the unstructured contents over the web by digital administrations;
- the knowledge extracted from the unstructured contents enriches the knowledge base (e.g. with new classified entities and new relationships);
- the uncertain knowledge cannot be extracted automatically, so human operators are to be engaged to disambiguate the situation;
- the explicit and implicit feedback coming from operators is also used to improve the knowledge of the system;
- the previous steps should be continuously repeated to improve the knowledge of the system and update the contents.

A web search engine can be essential to offer the best way for public organizations to find information between their big databases, partners’ archives, and citizens/SMEs email and documents. The search engine used in the project is built by using open-source software tools, is highly extensible, thus allowing the integration of ad-hoc search components and making it possible to fully exploit additional information (e.g. linguistic resources such as list of acronyms, or formalized knowledge such as, organization charts, the institutional mission of PAs and their jurisdictional boundaries). Besides e-government refers to a series of technical tools commonly used for interacting with public administration, such as electronic signature, PEC, e-procurement and on-line forms. All these instruments are codified in a single act: the digital administration code (CAD). The code, approved in 2005 and reviewed in 2011, establishes a number of normative innovations, which affect administrative practices and the quality of the supplied services. Italy’s programs on e-government are the result of the implementation of strategies and guidelines set by the European Union, which entails the improvement of the network bandwidth, the diffusion of digital contents, research and development activities, and the spread of digital administration services. The shift towards digital administration requires the development of a variety of well-suited solutions aimed at improving the internal organization, a comprehensive process generally known as re-engineering. Case-based research can be incredibly expensive in terms of direct cost and time expended. Nothing is more frustrating than incurring the cost of identifying information, reports or statistics only to find that they will probably provide no contribution to the research question. In our case, we had the possibilities to examine all the aspects of a project, in each phase of its timeline, and for this reason, we selected Yin’s methodology [20] that was appropriate for the current level of knowledge and the state of the research problem.

6. Innovative e-government services can represent a tangible evolution of valuable public services. Against public sector complex situation, we have to keep going the evolution of services in the hands of civil servants. Our future research activities will be focused to find the proper balance between the costs of human operators and the quality of the results the public sector as a whole can reach. The e-participation support needs of information access to foreign speaking users and gathers feedbacks from final users about the quality of the services and the information provided. For what concerns communication channels, they allow the development of new applications on mobile systems, tablet PCs, and, possibly, digital TV widget. Apart from explicit feedback, the one gathered through an explicit interaction with the user (such as, for example, question answering), the front-end module will provide mechanisms for implicit feedback collection (for example, through user click recording). Feedback analysis will be applied with different objectives, such as auditing, user profiling, suggestion techniques implementation, service improvement, and new services identification [23]. The front-end module interacts with the content management module by exchanging contents to be published. The content management module allows the structured organization of portals, manages all processes related to data gathering, approval and publishing. It also manages all information relevant for end-user personalization. At the functional level, the e-participation module auto-feeds its content by interacting with the underlying

knowledge management system. These tasks can be performed by new public managers, monitoring and providing functionalities related to public data sources, including the services' monitoring of each public administration, the knowledge base contents, feedbacks and citizens participation.

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