Megatrends in eGovernment

participation

networked government

cloud computing

mGovernment

government 2.0

transparency

trust & privacy

transformational government

Editorial

Articles

Editorial: Megatrends in eGovernment

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Spain

The first government websites were launched almost 15 years ago. E-government initiatives have since then proliferated at all levels of government. Early views assumed the move towards eGovernment as a single linear developmental path. This notion was soon captured by suppliers in a variety of stage models.

Those early views, clearly infused by technological determinism, tended to emphasise the technological dimensions of eGovernment and suggested a rather automatic set of outcomes and benefits. Experience, and even some high profile failures, showed us that eGovernment does not actually follow a single linear path, nor are its potential benefits so predictably accomplished. Project implementation is much more difficult than expected. Problems and barriers are not primarily technological, but also organisational, political, legal, or even cultural. Moreover, successful solutions and practices are usually highly dependent on local conditions.

If this complex historical background becomes fully appreciated, current and future eGovernment initiatives will likely be shaped by different basic orientations and goals. Is this currently the case? Will it be the case in the future? The aim of this issue is to identify and discuss some of the broad trends and paradigms that characterise the present landscape of eGovernment developments – some of which may be crucial for the future of governments.

José Luis Blasco and **Modesto Fabra** carry on a study of the evolution of eGovernment initiatives in Spain, paying attention particularly to the role of regulation and legal frameworks in stimulating and guaranteeing electronic relationships between citizens and public administrations. Despite all the advances that have taken place during the last decade, the three main trends they identify as guiding lines for present and future developments, are well known for eGovernment practitioners and analysts: simplification, transparency and administrative cooperation.

Simplification is also the subject of **Mirlinda Batalli**'s contribution to this issue. She highlights its importance for eGovernment administrative procedures. The paper analyses the positive consequences of simplification that go far beyond increasing efficiency and productivity in administrative bodies. In a more political arena, simplification may also lead to improved accountability, transparency and citizens' trust in government. The author discusses the pros and cons of past and present ICT-based strategies to address the challenges of simplification.

Alexander Heichlinger, **Cristina Borrell** and **Julia Bosse** analyse all the applications presented in 2009 at a European award contest for innovative projects in the public sector. Since many of the best practices acknowledged at two of the contest's themes (performance improvement in public service delivery and citizen involvement) make explicit use of ICT, they can be taken as a good proxy of present and future developments in eGovernment. The paper presents and analyses some of the best initiatives gathered at the contest and identifies the most common approaches: from the

improvement of back-office and the upgrading of organisational processes, to the involvement of users in the design and planning phase of the projects.

Thomas Zefferer and **Peter Teufl** deal with one of the most important emergent themes in eGovernment: the so-called mGovernment, a concept that refers to the use of mobile platforms and devices for public services. They focus particularly on the role Smartphones can play in providing new opportunities for improving existing services or create innovative ones. After identifying several risks – mainly concerning security – and discussing critical success factors for mGovernment initiatives, they conclude that Smartphones may be used to realise the potentials, while removing existing weaknesses, in mGovernment applications. They end up presenting an action plan that can assist in meeting the challenges of future secure and usable smartphone-based mGovernment services.

Karunakaran Sabarish analyses in great detail an mGovernment project in the state of Kerala, India. The paper examines the approach adopted to identify services and design solutions. Through some relevant case studies, the paper tries to capture the various challenges faced while trying to implement mGovernment, as well as the solutions devised to address them. Finally, the author tries to extract lessons from the Kerala experience that may be useful for future initiatives in India and abroad.

Mayo Fuster sheds light on a growing social phenomenon in the Internet that has attracted much scholarly attention in the last years, though it is still hardly addressed in the eGovernment literature. Online Creation Communities – also called Peer Production systems – were born more than two decades ago around the design of open source software but have been increasingly expanded to other domains of production. The paper focuses on the new governance style adopted by these communities; a style that fosters, on an unprecedented scale, participation and democratic decision-making in a digital environment. The author explores the way this new form of organisation may be used for improving government performance in an era of deep political legitimacy crisis.

Marijn Plomp and **Robbin te Velde** analyse another popular theme in the present Internet culture: web 2.0. Contrary to Peer Production, though, web 2.0 has indeed received much attention from eGovernment scholars and practitioners in the last years. Taking a critical approach to overcome the hype that usually surrounds this issue, they begin by providing an extensive and detailed description of the concept and an analysis of the critical preconditions and main outcomes for governmental organisations implementing web 2.0 initiatives, mainly in a G2G setting. Based on some case studies of local governments around the world, they end up calling for a more objective assessment of the actual value added by social media in the context of public administrations.

In conclusion, we are very pleased to bring together a collection of articles from various countries and diverse perspectives that closely analyse present big trends in eGovernment. Overall, we think the articles provide a nice balance between relatively new trends – web 2.0, mGovernment, peer production – and old and persistent strategic objectives in eGovernment – simplification and citizen's involvement and trust- that are still far from definitive accomplishment. We hope that the selected papers provide the reader with a valuable overview of the basic current trends that guide eGovernment design and implementation, both from a theoretical as well as a practical perspective.

Current trends in the evolution of electronic relations between the administration and citizens in Spain*

For several years the evolution of eGovernment in Spain has been influenced by various factors, both internal and external. These include an adequate legal framework, plans and programmes for eGovernment promotion, awareness of its advantages and increasing social demand. Depending on their circumstances, each type of administration has taken a different approach, although always with the purpose of encouraging changes in their relations with citizens. The present economic crisis must be also taken into account, since it is influencing eGovernment promotion initiatives. Under these conditions, the implementation process evidences three main trends in the current development of relationships via electronic media, also reflected in Spanish legislation on eGovernment: simplification, transparency and administrative cooperation.

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Keywords

eGovernment, simplification, transparency, cooperation

66 Simplification, transparency and administrative cooperation are the main trends in the electronic relationship between citizens and the administration in Spain. 99

1. Introduction

The implementation of eGovernment in Europe has flourished over the past few years. It has transformed the way public activity is undertaken, and especially the way national public administrations develop their relationships with citizens. This phenomenon is present in almost every country, although its relevance depends on the specific characteristics of each national context.[1] In the case of Spain, eGovernment evolution has been exponential, as evidenced by the UN (2010) report 'United Nations eGovernment Survey 2010', in which it was placed 9th worldwide. The report by the European Commission (2009) 'Smarter, Faster, Better eGovernment: 8th Benchmark Measurement' also shows that the specific services of Spanish eGovernment are above average levels in terms of both availability and sophistication.

The administrative structure in Spain has a plurality of levels, as a result of its territorial division and distribution of responsibilities. In addition to Central Government, with nationwide responsibilities, each of the seventeen Autonomous Communities has its own government, as do provinces and municipalities at a more local level. Each of these administrations has decision-making powers with regard to establishing or developing Information and Communication Technologies (ICT) in their relations with citizens and other administrations.

In light of the above, this paper aims to identify the main factors that have encouraged eGovernment development and to establish the extent of their influence today. The analysis is carried out from a legal perspective, determines the basic lines followed by this process and traces their origins. These trends constitute the basis for advances in eGovernment in the coming years. Hence, they will determine what public activity is needed to maximise effectiveness for citizens.

2. Factors in the development of eGovernment in Spain

Regulation of the use of electronic tools between the Spanish public administration and its citizens began at the end of 1992.[2] Over the ensuing years various administrations gradually began computerising their management systems and publishing information, usually of an institutional nature, on their websites. However, the degree of implementation varies according to the administrative level, with a greater presence evident at the national level and in some regional governments and, with some exceptions, more limited presence at the local level.

This situation has changed in recent years; now, although many municipalities are still in the first phase –with not even a minimal Internet presence[3] –, others are considered to be at the cutting edge in the use of electronic technologies in their relationships with citizens. Continual advances in the area of eGovernment are also being made at central and autonomous government levels. Table 1 shows several examples of services that are now provided.

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1   The status of eGovernment practices in European countries is available at http://www.epractice.eu/en/factsheets/.
2   Instigated under Law 30/1992, dated 26 November, 1992, on the legal framework governing Public Administration and administrative procedure.
3   Various studies provide evidence of this, for example, *Las Entidades locales ante la Ley 11/2007, de 22 de junio, de Acceso Electrónico de los Ciudadanos a los Servicios Públicos. Situación en la Comunidad Valenciana*, by the Grupo de Investigación sobre Nuevas Tecnologías Aplicadas a la Administración Local-Gintal (Research Group on New Technologies Applied to Local Administration), 2009 (http://gintal.uji.es/media/EstudioAE.pdf), the *Enquesta sobre l'adopció de les tecnologies de la informació y la comunicació a l'Administració Local de Catalunya 2009*, by the Fundació Observatori de la Societat de la Informació de Catalunya (Catalan Information Society Observatory Foundation) (http://www. localret.cat/serveis/coneixement/docs/informe-tic-ens-locals-2009.pdf), or the indicators published in the PAe, Portal de la Administración electrónica (Electronic Administration Portal) (http://administracionelectronica.gob.es/).

Table 1: Examples of eServices implemented in Spanish central, autonomous and local governments.

Service	Description
Red 060 (http://www.060.es/)	Allows citizens to receive information and process administrative formalities through various channels
PAe, Portal de la Administración electrónica (http://administracionelectronica.gob.es/).	Sets out to be a reference point of entry to all information on the situation, development, analysis, innovations and initiatives arising on eGovernment and incorporating contents and services from a wide range of sources
Spain's virtual Tax Administration (http://www.epractice.eu/en/cases/aeat)	Platform to access electronic services and process administrative formalities.
Public procurement platform (http://contrataciondelestado.es)	The Single Point of Information for the state public procurement process. It is a central node for information exchange and contracts in which bidders can participate.
Enterprise creation network in Spain: (http://www.epractice.eu/en/cases/circe)	Electronic processing system housing all the documentation necessary for start-up businesses.
Virtual Procedures Office (http://www20.gencat.cat/portal/site/OVT/).	Provides access to the procedures of the Government of Catalonia, town councils in Catalonia and other administrations.
SIMAC Integrated Multi-Channel System for Citizen Assistance (http://www.gva.es).	Includes links to the procedures most frequently demanded by citizens, access to all the electronic services of the Generalitat Valenciana, and direct access to the web sites and services of most interest.
Electronic Public Procurement Model (http://www.contratacion.euskadi.net/w32-home/es).	Using a simple yet rigorous secure and accessible system it aims to extend the use of electronic tools in the public tendering process in order to improve competitiveness and efficiency in Basque companies and the Basque Government.
Multi-channel Integrated Service System in Barcelona (http:\\www.bcn.es).	Provides central management of most of Barcelona City Council's information and services.
Madrid Participa (http://www.madridparticipa.es/).	Designed to increase citizen participation in the decision-making process in the city of Madrid, offering a more dynamic and continuous dialogue between political representatives and citizens.

In certain areas, the use of technology has gradually made considerable progress, such as in the automation of internal administrative processes initiated thirty years ago. In other areas, initiatives have been taken to implement either specific aspects of eGovernment, such as tax payments, or general relations with citizens through electronic media, such as electronic notification and registration. At the same time, administrative organisation has developed in parallel through the work of internal structures charged with promoting and planning eGovernment.

The process of generalising the use of eGovernment tools is influenced not only by the type of administration, but also by a range of factors that can act as both a stimulus and a hindrance to the implementation and development of eGovernment. Because the initial decision to embark on the process was conditioned by social, labour, economic and technological circumstances, in some cases the social, economic or administrative benefits citizens would gain from services were not considered sufficient to warrant the investment.

Each administration, therefore, starts from a different position, conditioned by its resources and environment, although the targets pursued are the same:

- To improve the services offered to citizens by simplifying procedures and making relationships less bureaucratic and easier to manage.

- To enable active citizen participation in managing questions that affect them.

- To provide citizens with access to administrative information.

All of these initiatives focus on establishing new relationships with citizens, and must go hand in hand with the will to transform these relationships. In this process, the citizen's relationship with the administration differs from previous experiences, and this framework introduces new rights and obligations for the administration. One example is the right to use open formats and standards in the relationship with government, as provided for in Spain and some other countries.[4]

The external and internal factors described below have a major influence on this process.

2.1 The public drive towards eGovernment

The first external factor is the establishment of strategies and support mechanisms to promote eGovernment. Both the European Union and national public administrations have put in place a series of programmes and initiatives designed to introduce a range of aspects of eGovernment.

Various publications on information society promotion define the European Commission's eGovernment policy (Table 2).

Table 2: Main EU documents on eGovernment.

Plan	Title	Reference
eEurope 2005	Communication of 26 September 2003 of the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions: 'The Role of eGovernment for Europe's future'.	COM (2003) 567 final - Not published in the Official Journal.
i2010 eGovernment Action Plan	Communication from the Commission, of 25 April 2006, i2010 eGovernment Action Plan: 'Accelerating eGovernment in Europe for the Benefit of All'	COM (2006) 173 final - Not published in the Official Journal.
Action Plan 2011-2015[*]	Communication of 15 December 2010 of the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: 'The European eGovernment Action Plan 2011-2015. Harnessing ICT to promote smart, sustainable & innovative Government'	COM(2010) 743
(Footnote)		
* The Action Plan identifies four political priorities based on the Ministerial Declaration on eGovernment, agreed on 18 November 2009 at the 5th Ministerial eGovernment Conference in Malmö, Sweden.		

This process was followed by various initiatives at a regional and local level in Spain, starting with the central government's Plan de choque para el impulso de la Administración electrónica in 2003, the

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4   One example is Sweden; see Lundell (2011).

Plan Conecta in 2004, the Plan Avanza (2006-2010) in 2006, for the development of the Information Society, the Plan de Actuación de la Ley de Acceso de los Ciudadanos a los Servicios Públicos in 2007, or the current Plan Avanza 2 (2011-2015) in 2009.[5]

The benefits of this drive are evidenced at the local level in particular, since due to their limited economic and technological resources, local governments have turned to other administrations for assistance.[6] These initiatives have therefore encouraged local politicians to initiate the implementation process and benefit from the advantages it offers, by enabling them to overcome economic and technical conditioning factors.

For this reason, effective inter-administrative cooperation initiatives are particularly important. In order for a true Information Society to exist, every area of the public administration system must be involved, so that no geographical areas are excluded, thereby depriving citizens of the advantages it offers.

2.2 The new legal framework

A second external factor concerns the emergence of new legislation governing electronic relations between the administration and citizens. In Spain, the most relevant legislation is Law 11/2007 of 22 June 2007, on citizens' electronic access to public services.[7] This regulation provided the stimulus and rationale to modernise the administration. It played a decisive dual role in advancing eGovernment, since it both spurred its development and determined appropriate procedures for implementation. Subsequent regulations approved by the regional governments have also contributed to its development.

Prior to 2007, although the introduction of information and communication technology (ICT) use in administrative activity and in transactions with citizens had been encouraged, there was no clear and comprehensive legal framework within which it could develop. The regulatory factor, therefore, has at times been an obstacle to eGovernment implementation, since a formal legal framework is crucial to guarantee that citizens are adequately protected in their relations with the administration, and to safeguard the security and certainty of all administrative activity. Law 11/2007 provided the legal guarantees for these relations, and therefore conclusively supported their implementation.

Law 11/2007 places the citizen at the heart of its regulation by establishing the electronic relations with the public administrations as a right and as a corresponding obligation for the administrations. Through this recognition it establishes the principles of eGovernment, takes into account citizens' rights in these relations and regulates its component elements and tools, such as signatures, communications, registers, documents etc. The public administrations, therefore, must facilitate the means for citizens to communicate with them through electronic media, and ensure the availability, access, integrity, authenticity, confidentiality and preservation of data, information and services that they manage when carrying out their competences.

This is a specific aspect of the Spanish law as compared to the laws of other countries, which do not establish a comprehensive set of citizens' rights. These rights offer a reference model for e-administration implementation processes within the European Union, and may be indispensable to future public services that transcend the national context.[8]

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5   Information about their lines of action or initiatives in collaboration with the Autonomous Communities and municipalities is available at http://www.planavanza.es/Paginas/Inicio.aspx.
6   An example of state support for local administrations can be found at: eGovernment platform for small and medium Municipalities, http://www.epractice.eu/en/cases/pistalocal.
7   A comprehensive study is provided by Martínez Gutiérrez (2009) and Piñar Mañas (2011).
8   See the *Ministerio de la Presidencia* of Spain report (2010): Legal frameworks and citizens charts of rights for

Other Spanish regulations, both previous and subsequent to Law 11/2007, complete the legal framework of eGovernment (see Table 3). In some cases they regulate complementary aspects such as the electronic signature, data protection, accessibility, interoperability or security, while others deal with specific areas of administration, such as public contracting or taxation. All of these regulations allow the administrations to take decisions on the question of eGovernment backed by the necessary legal guarantees. The Autonomous Communities have also brought in their own laws on eGovernment.

Table 3: Main eGovernment laws in Spain.

Law	Objective
Law 15/1999, dated 13 December, 1999.	Regulates the protection of personal data.
Law 34/2002, dated 11 July, 2002.	Regulates information society and electronic commerce services, as well as access to the websites of public administrations. It was amended by Law 56/2007 of 28 December 2007, on Measures to Promote the Information Society.
Law 59/2003, dated 19 December, 2003.	Regulates the electronic signature.
Law 30/2007, dated 30 October, 2007.	Regulates public sector procurement.
Real Decreto 3/2010, dated 8 January, 2010.	Regulates the National Security Framework foreseen in eGovernment Law 11/2007. This Framework establishes the security policy in the use of electronic means, and comprises the basic principles and minimum requirements for adequate information protection.
Real Decreto 4/2010, dated 8 January, 2010.	Regulates the National Interoperability Framework foreseen in eGovernment Law 11/2007. Establishes the criteria and recommendations on security, maintenance and standardisation of information, formats and applications to be taken by public administrations to ensure interoperability when making technology-related decisions

Other European countries have enacted similar legislation. For example, the eGovernment Act and the General Law on Administration Processes and the Electronic Signature Act set the main eGovernment framework in Austria. In Italy the adoption in 2005 of the eGovernment Code, a legal provision devoted entirely to eGovernment, provides the legal support necessary to develop eGovernment. In Finland, the Act on Electronic Services and Communication in the Public Sector has been in force since 2003. Other countries regulate specific aspects of eGovernment such as Freedom of Information Legislation, Data Protection, eCommunications Legislation, eSignature Legislation, and eProcurement Legislation.

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eGovernment in the European Union. This report presents an initial diagnosis of the situation of the citizens' rights before the European and Member States' eGovernment.

2.3 Increasing social demand

The third external factor, also considered in Archmann & Castillo Iglesias (2011), is the growing citizen demand brought about by the advantages of eGovernment.[9] These include savings in time and expense, by removing the need to visit government offices and habitual waiting time. In any case, the extent to which electronic media are used will always be conditioned by the use citizens make of them, and often depend on the political and social benefits they generate. For this reason, campaigns aimed at ensuring Internet access for broad sections of the population are on the rise, in an attempt to mitigate what is known as the digital divide, and provide a legal guarantee of effective accessibility.

Social demand favours the adoption of these technologies[10] and at the same time their availability leads to a more aware and demanding citizenry. The use citizens make of electronic media and the consequent added value in the service offered must therefore be evaluated, since these factors play a central role in eGovernment implementation. From this perspective, both educating citizens in their use, and investment in the infrastructures required to ensure adequate citizen access should be taken into account.

This demand is seen particularly in economic and business sectors, which view eGovernment as a crucial developmental factor. Various studies carried out by business organisations have calculated the savings in time and expense that administrative simplification through eGovernment would mean for their members.[11]

2.4 Increasing social demand

The most outstanding internal factor is the increasing awareness on the part of politicians and public managers of the advantages offered by ICT. This awareness has led to a widespread ambition among public administrations to modernise their technologies. Evidence of this tendency can be seen, firstly, in the presence of entities at all levels of public administration working exclusively on modernising or incorporating new technologies and, secondly, in the numerous projects currently emerging.[12]

One of the demonstrated advantages of offering public services electronically is the saving of economic resources and time, both for the administration –which becomes more efficient– and for the user.[13] Indeed, one factor driving public administrations to adopt these technologies is their constitutional obligation to be efficient, participative and transparent; electronic tools offer an appropriate solution to meet these objectives. These initiatives are also closely linked to the degree

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9   In addition, an analysis of citizen demand for services offered by administration websites is presented in Foley (2008).

10 This has also been noted, for example, by Liikanen (2003).

11 The European Union has had an impact in this area through its *Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - The Role of eGovernment for Europe's Future* COM/2003/0567 final (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52003DC0567:EN:HTML)

12 A recent sample of projects can be found in Tecnimap 2010, the main European meeting on information technologies and telecommunications which brings together representatives from various different Public Administrations, as well as the sector's leading companies, and diverse experts related with this field. The Tecnimap Conference is designed to be a space for the sharing of ideas, experiences and projects related to information technologies and public services (http://www.tecnimap.es/en)

13 This aspect has been referred to, for example, by the OECD (2003) *The eGovernment Imperative*, by European Commission (2006), Communication, of 25 April 2006, i2010 eGovernment Action Plan - Accelerating eGovernment in Europe for the Benefit of All [COM (2006) 173 final - Not published in the Official Journal], and in Spain, by the *Replace Paper Certificates* initiative (http://administracionelectronica.gob.es/?_nfpb=true&_pageLabel=PAE_PG_CTT_General&langPae=es&iniciativa=212#descripcion).

of use the administrations make of these technologies, since it is this usage that generates further need.

The incorporation of ICT enables administrations to provide better services to the citizen since, as it is generally understood, the advantages pursued through their use in administrative activity include greater public disclosure and transparency. These allow for a wider dissemination of and accessibility to information, speed and efficiency, since they reduce time procedures and therefore citizens are informed about decisions more quickly. Moreover, the administration gains in efficiency and economy by making better use of its resources, which is evidenced not only in material savings, but also in the processes involved in document and administrative management.

However, it should be remembered that the desire to introduce electronic relations frequently goes beyond administrations' real possibilities, since they depend on certain initial conditions for the project to be effective. The first of these requirements is the change in the perspective implied in the relationship between the administration and the citizen. Consequently, other aspects that condition the practical achievement of eGovernment are political commitment, knowledge on the part of the users for whom it is designed, and the development of infrastructures to put it into practice.

3. Aspects of the transformation of relations between the public administration and citizens

The factors highlighted above have paved the way for a favourable context and an appropriate regulatory framework to advance the implementation and development of eGovernment, and to transform relations between public administration and citizens.[14] However, this process has recently been slowed down by the present economic crisis, which is also affecting public administrations. On one hand, the financial support available in previous years has decreased and, on the other hand, expenditure on the introduction and development of electronic services has also been minimised. In any event, each administration has its own individual characteristics, and follows its own implementation strategy, although all of them share the same basic assumptions and aims. This has led them to set significant objectives that represent a true challenge in the way administrative activity is undertaken and in how the citizen's relationship with the administration is understood.

As described above, attempts to meet these targets involve facilitating these relationships or administrative formalities by simplifying the bureaucratic burden that can affect citizens and by providing as much information as possible. These aspects, covered as primary aims of Law 11/2007, must be met if a more transparent, accessible and efficient administration is to be achieved.

Simplification and transparency are therefore the main trends marking the current evolution of relations between citizens and the administration in Spain in this area,[15] together with crucial administrative cooperation.

To put ICT into context, we must start from the idea that their use in the sphere of eGovernment has affected the traditional concept of the administrative document. Much is now heard about the dematerialisation of administrative procedures and, therefore, of the document –or more specifically, administrative proceedings– as the format changes. Dematerialisation is seen in the gradual physical disappearance of documents and administrative proceedings in their traditional paper format and

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14 Torres (2004) describes this process in different countries.
15 Recently, Law 2/2011, dated March 4, 2011, on sustainable economy, has introduced new obligations on administrative simplification and transparency as part of a package of measures to tackle the economic and financial crisis.

their replacement by electronic procedures and documents. Therefore it refers to the use of ICT to deal with information contained in these procedures and documents, which greatly eases and simplifies the relations based on this information, whether two-way (administrative procedures), or one-way (access to information). The final objective is to achieve a paperless administration, which at the same time will simplify and rationalise its activity and its relations with citizens.

This dematerialisation is already at an advanced stage in some administrations that began to computerise their internal processes, such as financial management or taxations, some years ago. These administrations have gradually seen improvements brought about by systems that allow for the treatment and exchange of data. Particularly relevant today is the way dematerialisation is beginning to make progress externally through electronic interventions that meet all the stipulated technical and legal requirements and therefore have full legal validity.

3.1 Procedural simplification

3.1.1 Administrative debureaucratisation and rationalisation

The simplification of procedures and rules is a primary aspect of electronic administration. Numerous initiatives, often linked to the present economic crisis, are currently underway to simplify procedures as a way of boosting economic activity. Similarly, in line with European or OECD Better Regulation initiatives,[16] a Plan of Action for the Reduction of Administrative Burdens has been drawn up at national level to facilitate relations with the administration.[17]

The intensive use of ICT is essential to administrative simplification. This simplification is frequently linked to eGovernment projects, since they are designed to improve communication at the core of the administration and make the use of information more simple and efficient. In the OECD report 'Cutting Red Tape: National Strategies for Administrative Simplification', administrative simplification is considered to have benefited from the rapid development of ICT, which lends greater coherence and efficiency to interactions between the administration and citizens.

However, the use of electronic channels does not mean that procedures are still carried out in traditional ways; on the contrary, it implies an effort to rationalise and improve management. To this end, the above-mentioned Spanish Law 11/2007 expressly establishes the principle of administrative simplification, which binds administrations to substantially reduce the time required by procedures, in order to increase efficacy and efficiency in their activities. It also establishes principles for ICT-based administrative activity that are designed to simplify procedures and debureaucratise administrations. These aspects, together with compliance with specific trust and security requirements, should be taken into account in the design of any service that will be processed electronically; indeed, if they can not be guaranteed, the service cannot be considered feasible. These aspects include the principle of equality, the principle of legality –namely, upholding the integrity of citizens' legal guarantees–, the principle of cooperation in the use of electronic media, the principle of security in the introduction and use of electronic media, the principle of proportionality, under which only the guarantees and security measures tailored to the nature and circumstances of the processes and activities are required, the principle of technological neutrality, etc.

Law 11/2007 establishes how this process should be adopted, once an analysis has been made to redesign the function and simplify the procedure, process or service. This process should take into

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16 OECD (2009), Overcoming Barriers to Administrative Simplification Strategies, Paris: OECD.
17 http://www.mpt.es/areas/funcion_publica/iniciativas/normativa_es/plan_accion_reduccion_cargas_advas/document_es/documento.pdf

account of the following aspects:

- The elimination or reduction of documentation citizens are required to provide, through the replacement by data, data transfer or certification, or the regulation of their provision at the end of the process.

- The provision of means and tools for participation, transparency and information.

- The reduction of response periods and times.

- The rationalisation of workload distribution and internal communications.

In preparation for the introduction of this channel of relations, the administration must ensure that citizens can exercise their legally recognised rights to simplified procedures, such as not having to provide data or documents that the administration already holds, or being able to find out electronically what stage of the process their procedure has reached. Moreover, citizens using electronic channels in their relations with the administration must enjoy the same rights accorded by traditional channels, in addition to those pertaining specifically to the use of electronic media. This constitutes one of the keystones of the system, grounded on the two-way principles of equality and non-discrimination between the two forms of relationship.

3.1.2 Simplification and the Services Directive

At the same time, in the context of community legislation, numerous initiatives have been put in place to reduce costs generated by complying with legislation in a cross-border context and to simplify procedures for citizens and businesses. Essential to these initiatives are electronic services, the exchange of information among Member States and administrative cooperation.

One specific case revealing concern for administrative simplification is that of Directive 2006/123/EC, of the European Parliament and of the Council, dated 12 December 2006, on services in the internal market. It is one of the keystones of EU strategy to boost the economy and to consolidate the internal market following the Lisbon agenda. Regarding the issues dealt with in this paper, it aims to establish a true single market for services by eliminating the legal and administrative barriers that currently restrict its development among Member States. Two of its main objectives are to reduce administrative burdens and to guarantee greater legal certainty to those who wish to provide a service.

Among other aspects, these objectives should translate into the elimination of administrative authorisations that are not justified for reasons of general interest, or are unnecessary to attend to those aims (replacing them, where necessary, with responsible notifications or declarations) and the simplification of the formalities that service providers are required to carry out. In the latter case, all procedures and formalities that are finally retained must be revised to ensure they are clear and unambiguous, objective, transparent and proportionate to the public interest objective.

In contrast to other European countries, Spain has incorporated the Directive through a general law, without prejudice to other modifications related to laws directly affected by it.[18] The Spanish government has also approved tools that are now available to all administrations. One example is an online computer application known as the System of Identification and Screening of Affected Regulation (SIENA), accessible to all administrations, which allows consultation and assessment of all cases potentially affected by the Services Directive.

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18 At a national level, these laws are: Law 17/2009, dated November 23, 2009, on free access to service activities and their practice, and Law 25/2009, dated December 22, 2009, modifying various laws for adaptation to the Law on free access to service activities and their practice.

Together with the above, the Directive also establishes that the potential of ICT must be used to the full and, in particular, the provision of a point of single contact where citizens can obtain information and complete the formalities necessary to set up a service activity online, either within Spain or in any other European Union country. As with all eGovernment platforms, the point of single contact allows both access to information and processing of procedures and formalities.

This system must be accessible at a single point, through an electronic channel and remotely. However it must respect the distribution of competencies established in Spain. To this end, the national government has set up a project for a virtual point of single contact that will provide consumers and service providers with all the necessary information on procedures and formalities to access or operate a service activity in Spain, and the possibility to process these formalities online.[19]

Law 11/2007 has undoubtedly facilitated the transposition of this Directive and the incorporation of the point of single contact. Its application implies the existence of electronic services and procedures, the possibility to register documentation electronically, electronic communication and notification by the administration to interested parties, etc. In any case, the point of single contact must coordinate and integrate the information and electronic access to formalities and procedures, provided by each and every one of the administrations responsible for them.

3.2 Administrative cooperation

ICT are also creating a climate for growing administrative cooperation, which has led to significant simplification of citizens' relations with the administrations.

Similarly, administrative cooperation will help improve other areas of management and in particular, the supervision and control of citizens' and businesses' activities.

The Services Directive allows us to identify concrete examples of this trend, since it establishes a clear obligation to cooperate with the competent authorities in other Member States. The smooth working of the internal market for services has been hindered by lack of administrative cooperation, and the lack of confidence in the regulatory framework and in the supervisory and control tasks in other Member States has led to a proliferation of regulations and duplication of controls in transborder activities. Specifically, this Directive stipulates that Member States can make requests whenever they are deemed necessary for the supervision of an individual supplier, and requests must be duly motivated and reasons specified for each request. The Member State that receives a request is obliged to respond electronically as quickly as possible. In addition, the Commission, in cooperation with the Member States, is obliged to establish an electronic system for the exchange of information. The Services Directive also requires Member States to inform each other of potentially dangerous services through this electronic alert system.

Another area in which electronic media have enabled firm channels of administrative cooperation to be consolidated is taxation. A recent initiative includes the approval of Directive 2008/55/CE of the Council, dated 26 May 2008, on mutual assistance for recovery of claims relating to certain levies, taxes, duties and other measures (OJEU, series L, No. 150, dated 10 June 2008), which provide for the use of electronic media in mutual assistance, thus offering rapid mechanisms for operation. Another example is Council Regulation 904/2010 dated October 2010, on administrative cooperation and combating fraud in the field of value added tax (VAT). This regulates the exchange of information to facilitate the control of VAT and sets up the Eurofisc network.

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19   http://www.eugo.es

Cooperation is also essential to achieve administrative efficiency. In the Spanish administrative system it is one of the principles governing relations between public administrations. Indeed, Law 11/2007 refers several times to cooperation, to ensure both the interoperability of the systems adopted by each administration, and the joint provision of services to citizens. It specifically aims to ensure mutual recognition of electronic documents and identification and authentication systems.

Cooperation is also especially important for the development of local eGovernment services. One major obstacle to this development is the lack of telecommunications infrastructure and the insufficient resources to ensure the use of ICT. Cooperation can help to improve this situation and can be coordinated through Central Government and Autonomous Community initiatives, usually related to financial assistance and technology applications or platforms. Law 11/2007 also provides other ways of making these technologies more accessible to local authorities, recycling systems and applications (article 45) and transferring technology (article 46). In addition, provinces play an important role by providing economic and technical assistance to municipalities, especially in those cases in which local governments lack economic and management capacity.[20]

Finally, other forms of municipal cooperation such as consortia can help meet certain needs and jointly manage some specific local government services.[21]

3.3 Administrative transparency and electronic government

Electronic government is an essential factor in the Information Society. If anything can be said to characterise the Internet, it is precisely the enormous accessibility and immediacy of the information it provides. Public administration activity is based on information, and knowledge about this information is essential to modern democracies, since it makes transparent government a possibility. ICT allow information to be managed at previously unknown levels.[22]

3.3.1 Administrative transparency and the electronic office

One of the purposes of Spanish Law 11/2007 is to enable citizens to access administrative information and procedures through electronic media, and in particular to eliminate the barriers that restrict this access (Article 3). Law 11/2007 represents a major step forward in this direction. Administrative transparency can be achieved by various means, and with a proactive attitude on the part of the administration, information needs can be met, and even anticipated.

As a general principle, transparency has been adopted across all fields of government. Likewise, all citizens now enjoy the right to access information, in accordance with established legal conditions. Law 11/2007 has played an important role in the consolidation of this right, since it binds the administration to adopt the following principles in the use of these technologies:

- Access to information and services by electronic media through systems that make information available in a safe and comprehensible manner and, in particular, guarantee universal accessibility.

- The transparency and public nature of the process by which the use of electronic media must facilitate the maximum dissemination, publicity and transparency of government actions.

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20 Law 7/1985, dated April 2, 1985, regulating the rules of local government
21 One example is the Localret consortium (www.localret.cat), made up of local authorities in Catalonia to act in a coordinated and unified way by developing networks and telecommunications services, and applying ICT to enhance local governments actions to drive the knowledge society.
22 An analysis of transparency in information from the authorities of different countries is offered in Osimo (2008).

Under the Law, information provided electronically is subject to the same principles and guarantees as as those governing face-to-face or other situations; all information provided in this way must, for questions of security and trust, include the date of the last update. This regulation has updated various aspects of the government information framework, thus going one step further towards making it effective. As well as being a requirement in the use of ICT, these provisions must be present in the decisions referring to the development of eGovernment adopted in the corresponding administration.

Furthermore, the general obligation of public administration transparency, integral to this system, determines that all unclassified information must be made available to citizens. This should at least include all the information that is legally bound to be made public as well as that provided by other channels, although being made public in this way does not supplant the obligation to publish regulatory provisions and proceedings in the official media. Consequently, effective right to access must be guaranteed; the broadest manifestation of transparency is the possibility for open consultation of universally accessible information resources, as stated in the Law, with the guarantee that this can be done without having to present any type of prior identification.

This consultation can be made through the administration's electronic office and the guarantees it provides, such as the date of update and quality. The role of the electronic office is therefore essential, since it represents the effective presence of the corresponding administration on Internet. As the entity responsible for ownership, management and administration, the administration must monitor the veracity, integrity and updating of all accessible information and services.

In addition, administrative transparency has been stimulated by greater awareness about access to and the public nature of official documents in the European sphere, consolidated in the Council of Europe Convention on Access to Official Documents, adopted on 27 November 2008, and opened for signature and ratification on 18 June 2009.[23] This convention establishes certain minimums that must be respected by the Member States of the Council of Europe that adhere to it. Access to administrative information will not be limited exclusively to electronic media, although they will allow the obligations provided for in the convention to be complied with. Article 10 of the convention establishes the obligation on the part of public authorities, under their own initiative and at their own convenience, to take the necessary measures to make available all public documents in their powers in order to promote the transparency and efficiency of the administration and to encourage the informed participation of the public in issues of general interest.

3.3.2 Administrative transparency by sectors

Special legislation has gradually brought the specific obligation of transparency into force.[24]

Urban development and planning is particularly sensitive to the question of transparency. In Spain, public administrations with spatial and urban planning competences will publish online the updated content of spatial and urban planning instruments currently in force, of announcements that are to be made public and of any proceedings that may be relevant for their approval or modification.[25]

The particular requirements of information provided through electronic media have also been noted in the area of public administration contracting. There have been repeated demands for publicly

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23 Spain is one of the few states of the European Union that has no specific legislation on this matter, a gap that the Law on transparency and citizen access to public information is designed to fill, and for which a draft bill is currently in preparation.

24 A comprehensive study of administrative transparency in Spain, Germany, Italy, France and the United States can be found in García Macho (2010).

25 Article 70 third, of Law 7/1985, dated April 2, 1985, regulating the rules of local government.

available information in this field, now strengthened by the obligation to publish the contractor's profile on line. The purpose of this is to ensure transparency of and public access to information related to tendering and contracting activity. Means of accessing the contractor's profile must be specified on public sector institutions' websites, on the Platform for Government Contracts and in specifications and calls for tender.

On environmental matters, the Aarhus Convention[26] establishes the right of citizens to access relevant environmental information, their legitimacy as participants in the process of taking decisions on environmental issues, and recourse to justice when these rights are denied. In complying with the obligation to provide environmental information, electronic media again play a crucial role. Directive 2003/4/EC of the European Parliament and of the Council, dated 28 January 2003, on public access to environmental information, establishes that Member States will take the necessary measures to ensure that public authorities organise the environmental information which is relevant to their functions and which is held by or for them, with a view to its active and systematic dissemination to the public, in particular by means of computer telecommunication and/or electronic technology, where available. It also requires that environmental information be progressively made available in electronic databases that are easily accessible to the public through public telecommunications networks. The requirements of the Directive have been incorporated into Spanish legislation, [27]and the administrations involved are gradually adopting the means and initiatives to bring them into effect.

Finally, although not exclusively, particular requirements for administrative information have been advanced in taxation matters and in the use of electronic media to disseminate this information. It should be borne in mind that in Spain, as in many other legal systems, it is the taxpayer's duty to interpret the tax laws and to meet their obligations by presenting tax returns in which no tax payment is made until the amount payable has been assessed. It is therefore especially important that taxpayers are fully aware of the interpretive criteria used by the administration, so they can follow them in fulfilling their obligations. On this matter, the Spanish tax regulations[28] oblige the tax administration to inform taxpayers of these administrative criteria, particularly through electronic media, and to facilitate consultation of the computerised regulations in which these criteria are detailed. Publication of updated texts of current regulations in force must also be published for free consultation on Internet.

4. Conclusions

Several factors have advanced the evolution of eGovernment in Spain. In this paper we have identified three external factors and one internal factor that have provided a favourable context and an appropriate regulatory framework to advance its implementation and development. Depending on the presence of these factors, each administration level has started from a different point, but always with the common aim of bringing about change in the relationships they have with citizens.

The main internal factor is the widespread willingness of authorities to embrace technological modernisation, due to an increased awareness of its benefits. The first external factor is the set of strategies and aids developed to promote eGovernment, both by the EU and by the different Public Administrations, with the goal of advancing the implementation of various aspects of eAdministration.

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26 UNECE Convention on access to information, public participation in decision-making and access to justice in environmental matters, adopted in Aarhus on 25 June 1998.
27 Law 27/2006, dated July 18, 2006, regulating the right of access to information, public participation and legal recourse on environmental matters.
28 Law 58/2003, dated December 17, 2003, on General Taxation.

The second external factor is the advent of new regulations on electronic relationships between government and citizens, since it has provided a stimulus and a justification for administrative modernisation. The third external factor is the growing citizen demand for the potential benefits it can bring them.

The legal guarantee of the citizens' rights to interact electronically obliges government to offer electronic services and facilitate their access. Hence, it has been an important impulse for eGovernment and constitutes a very positive experience that could be generalised to other countries. However, it must be taken into consideration that legal regulation of guarantees is an insufficient stimulus if there is no political conviction regarding the potential of eGovernment to improve the efficiency of public services provided to citizens.

In this implementation process, we identify three major trends that mark the ongoing development of these relations through electronic means: simplification, transparency and administrative cooperation.

These main trends are included as principles for action in the Spanish legislation on eGovernment and also, several European directives have played an important role in their consolidation.

The simplification of procedures, usually linked to eGovernment projects, improves communication between the administration and citizens. One of the most recent European initiatives on this, in part applied with the use of electronic channels, is Directive 2006/123/EC of the European Parliament and the Council of 12 December 2006 on the services market.

With respect to administrative transparency, the use of electronic techniques allows greater and better access to information, removing barriers that limit the right to know. Several European legal instruments have influenced this trend, subsequently fleshed out by national legislation, both from a general perspective and in specific areas such as planning, environment, taxation or government procurement.

Finally, these technologies also enhance progress on administrative cooperation, which is translated into a significant simplification for citizens in their dealings with different types of authorities. In addition, technical and economic cooperation is also essential to enable administrations with limited resources to implement ICT tools.

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Simplification of public administration through use of ICT and other tools

Simplification of the public administration is a major concern and priority for most countries in the world in the era of digitalisation. It leads to improvement of efficiency and effectiveness of the state machinery.

The introduction of the reforms regarding the simplification of public administration through the use of ICT and other tools differs from one country to another, due to differences in their institutional, political and cultural structures. Simplification of public administration leads towards re-engineering of administrative procedures and introducing a new organisational, architectural and operational model of administration.

The simplification of public administration enables the modernisation of relations between citizens and public administrations, the introduction of a principle of trust for administrative procedures and simplification of daily life for citizens. It is a common issue and it influences the interest of public servants performing duties in the state administrative bodies.

Implementation of Information and Communications Technologies (ICT), drafting of the laws in harmony with the best international practices, improvement of capacity, building of public institutions to carry out the administrative procedure simplification, and one-stop shops, could be considered as the main tools for the simplification of public administration.

eGovernment is a key instrument for successful implementation of all respective administrative simplex programmes.

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Keywords

Simplification, ICT, reform, administrative procedure, public administration, eGovernment, eGovernance.

> " Implementation of ICT and other tools are key elements for administrative simplification, while citizens' engagement is of the utmost importance in this ongoing process. "

1. Introduction

Administrative procedures are mechanisms for interaction between public authorities and citizens. Both academic and practitioner publications in recent years have contained a great deal of writing about the reforming of administrative procedures.

Procedure is the first to be affected in times of transition (Barnes, 2006). The reforming of public administration in the 21st century should be followed by streamlining and simplification of administrative procedures that cover management, financial control and communication with citizens as well.

The purpose of this paper is related to the notification regarding the simplification of administrative procedures as part of a broader process of modernisation that aims to improve the performance of public services in order to optimise both their quality and to reduce the expenses. The paper aims at describing the connection between simplification of administrative procedures and building of trust in government on the basis of a few principles such as: apparent and constant rules, single application files, streamlined procedures, efficient decision-making, provision of eServices and facilitation of payments.

The paper is focused on progress and achievements made related to simplification of public administration through the use of ICT and other relevant tools that open paths toward global perspective of administrative simplification. Such perspectives shall impact enhancing the user satisfaction, decision making, the sustainability in public administration, increasing the efficiency and effectiveness, lowering administrative burden, etc.

The importance of this paper is related to the relevance of simplification of administrative procedures toward the reform of public administration, as a revolutionary measure and the role of eGovernment as a main engine in this process.

Simplification of administrative procedures enables more effective exchange of information, transforming the methods of communication with institutions, citizens and civil society groups. The shortcomings and deficits of traditional methods of government, firmly entrenched in the old legal framework of prohibitions, commands and enforcement tools, have given way to other deeply interconnected models, mechanisms, and instruments that have become one of the hallmarks of our times in many areas (Barnes, 2009).

eGovernment and ICT are seen as key elements of a government's modernisation initiatives and programmes that facilitate the simplification process of public administration. In this regard, implementation of ICT enables simplification of goals, carrying a variety of developmental advantages.

Therefore, the laws of administrative procedure of the 21st century find new grounds, instruments, systems and vision for cooperation and interaction between citizens and administration that lead toward the simplification of administrative procedures.

The study of this paper is based on legal, analytical, comparative, sociological and political methodology. All these methods are implemented in comparative manner in order to provide a clear overview of the simplifying process in public administration.

2. The concept of administrative procedures simplification

Reform of administration presents a key element for ensuring efficiency, effectiveness and accountability of public administration in providing public services to the society and a critical part of state-building process due to the need for social development, economic growth, stability and poverty reduction.

One of the key elements of public administration reform is the simplification of administrative procedures through implementation of ICT and other tools. Use of ICT allows the wide-ranging citizens to participate dynamically in policy drafting and guarantees apparent use of public resources.

Administrative simplification strategies are designed to reduce regulatory complexity and uncertainty, and to cut red tape, reducing unnecessary burdens created by bureaucracy and paperwork. Its final objective is to promote the rule of law, efficiency and economically enabling environments (OECD, 2009). Simplifying public administration is one of the recurring mottoes of administrative reforms (Ziller, 2008). Simplifying government is a Herculean task, as the complexities involved at every stage have to be studied and re-engineered for better service delivery. Leadership at different levels of governance/administration is needed to take this process forward. The leaders have to leverage the potential of technology such as eTools to make the simplification process easy and citizen-centric (Srinivasa Rao, 2004).

According to the section referring to good administration in the EU Charter of Fundamental Rights in December 2000, "Every person has the right to have his or her affairs handled impartially, fairly and within a reasonable time by the institutions and bodies of the Union" (article 41).

The simplification of administrative procedures enables the modernisation of relations between citizens and public administrations, in particular the introduction of a principle of trust for administrative procedures, simplification of daily life administrative procedures; simplification of the organisation and functioning of the public health system, modernisation of public procurement, etc. Modern administrative procedures are impacted by the process of globalisation and transnationalisation of administrative relations, or the cooperation of both public and private sectors.

Therefore, governments should put effort in the consolidation of the existing and creation of new public administration developments. Efficiency of the administrative system is an important factor, which enables a rise in the efficiency of the national economy, as well as the entire society. There is a need for better understanding and knowledge of how to implement efforts towards reducing the administrative burden for citizens and business through the analysis and discussion of the approach developed and tools used for administrative burden reduction.

3. The purpose of simplification of administrative procedures

The wider impact of administrative simplification through the use of ICT and other tools is the improvement of the overall competitiveness of markets and economies and the strengthening of the trust of citizens in government. It is crucial that all governments take successive steps to develop and define administrative simplification policies and to set up an assortment of institutions to implement and monitor them (Better regulation in Belgium). Simplification of administrative procedures ensures that policies, the mechanisms chosen to implement them and the necessary legal framework are never more complex than is necessary to reach the objectives effectively. The simplification might be a technical simplification towards the use of ICT as a basic tool, revision of the legal framework and policy simplification reducing complexity through improvements of

policy instruments. Administrative procedure simplification aims to establish flexible and unlimited channels of communication exchange between the administration and the citizens.

The process of eGovernment and simplification of administrative procedures as an opportunity for change in challenging time, create important benefits for citizens and businesses. eGovernment and simplification of administrative procedures enable citizens to express their opinions, argue for the priorities and participate in decision-making. eGovernment modifies relations between public authorities, companies and citizens in order to provide better administrative services through the use of ICT and other respective tools. eGovernance has proven its advantages in simplifying public administration: it allows administration to share information and data internally and with users more easily; it enables the administration to broader the channels of service delivery; it provides the administration with tools to ensure integrated and "seamless" services (OECD, 2008).

4. Overcoming barriers and challenges towards administrative procedure simplification

Today, governments face a growth of challenges that involves transition to a knowledge-based economy due to rapid technological advances, and changing demographics. These challenges require a fundamental re-examination of the government's priorities, structure, processes, policies, and programmes. Better service delivery can be achieved only if public management can leverage technological advancements and simplify its processes that have become complicated over the years.

Public administration in all systems faces challenges to ensure and achieve an efficient, effective, accountable, professional and fair public service. The development of an administrative system in an inadequate and unsuccessful way represents an insurmountable obstacle for further development of the State and the society as a whole. One of the challenges for the modern world is to intensively use the ICT and implement regulations in such a way that they achieve efficient outcomes in the most cost-effective ways. This has led to the developments in the European Union of a policy on Better Regulation and policies with similar objectives in most OECD countries. In response to these challenges, most of the governments have over the past two decades increasingly focused on reviewing and reducing red tape.

In eGovernment initiatives to improve the efficiency of transactions with citizens and business governments have included the removal of old or contradictory provisions, and guidelines on administrative regulations, and introduced new ways to measure administrative regulations. An eGovernment project cannot be considered successful unless it leads to a confident operational level that simplifies public administration.

Proper usage of ICT communications in the public sector is a key precondition for eGovernment distribution, while deprived knowledge and lack of IT resources are factors that delay eGovernment implementation. Therefore, delays in implementing eGovernment reforms can reduce the administrative simplification and economic development in this increasingly active, swiftly changing world. The use of ICT often may face certain obstacles, caused by extended phase of manual processes alongside ICT applications, legal obstacles and other multifarious procedures.

Transparency and accountability in public administration, disadvantages in legal and regulatory frameworks, and the relative ineffectiveness of a financial system that constitutes a reform priority are considered as a challenge for simplification in most of the countries. The process of globalisation needs to further promote the reforms necessary to create an enabling environment for trade, investment and private sector development.

When discussing concrete issues and policy options, each country needs to develop its own model and adapt others' experiences to undertake administrative simplification successfully (OECD, 2009). The methodology for carrying out the process of redesign the administrative procedure is simple and comprehensive, covering the vision, objectives, strategies and processes. This aspect of administrative reform is quite complex, demanding systematic analyses of organisational mandates and structures as well as internal and external modes of communication and operation.

5. Tools for simplification of administrative procedures

In the sense of simplification of administrative procedures it is crucial to develop the tools that will ensure more reliable performance for better and more efficient service delivery. Each government should define clearly its objectives which could vary from country to country, regarding the tools for simplification of the administrative procedures.

Government projects are instruments for achieving social goals toward the simplification of the administrative procedures. The role of ICT as tools to achieve administrative simplification and burden reduction is well recognised. Digital applications could make the administrative simplifications possible, while administrative reductions could facilitate the development of new eServices.

Drafting of the laws in line with the best international practices, improvement of capacity, building of public institutions to carry out the administrative procedure simplification and increased responsiveness of the public to their rights and instruments for declaring these rights in the agenda of administrative procedure simplification, could be considered as the main tools for administrative simplification.

Implementation of one-stop shops is also one of the widespread tools for administrative simplification that can enable substantial savings in time and costs for users by providing seamless, integrated and easily accessible points of contact.

In addition, simplification of administrative procedures is also related to: issuance of handbooks and guidelines on procedures online, processing specific stages of a whole process electronically, avoiding duplication of information requests and checks, creating advanced databases, etc. Strong commitment and support from the political levels are essential tools in any simplification initiative. This engagement provides the basis for the simplification of administrative procedures to ensure that the new regulatory processes are established and operational.

Administrative simplification tools could be more effective if they are not seen and implemented in isolation, but be integrated with broader strategies and methodologies for improvements in administration.

6. Administrative procedure simplification in relation to use of ICT

During the last decade a revolution in information and communication technologies (ICT) has been witnessed. This revolution is not only changing people's daily lives but also the characteristics of the interaction between governments and their citizens. These changes, in turn, are rapidly being transformed into new forms of government, namely, eGovernment. The revolution of eGovernment influences the transformation of citizens' relations with the administration, through improvement of service delivery on the one hand and communication on the other hand.

ICT are considered as important tools for achieving administrative simplification objectives by

reducing the administrative burden on citizens and improving the quality of public services. ICT changes the way the government performs its functions and helps to reduce operational expenditures, increase the effectiveness and efficiency, apply transparency and responsibility at the governmental level, focus on different fields of reforming and simplifying administrative procedures, starting from modernising recruitment procedures, improving decision making, combating corruption, enabling trade of information, reducing the costs, enhancing the coherence, increasing the control, consolidating basic principles of good governance etc.

ICT implementation and innovation is a model and a driver for efficiency and quality. ICT is also a crucial element in adopting the necessary measures, which include simplified questionnaires, authenticated portals, authenticated prefilled online forms and direct online reporting, thereby making it unnecessary to appear in person (Archmann & Castillo Iglesias, 2010).

Hammer (1990) considers IT as the key enabler of business process re-engineering, which he considers as a "radical change". He prescribes the use of IT to challenge the assumptions inherent in the work processes that have existed since long before the advent of the modern computer and communications technology. He argues that at the heart of re-engineering is the notion of "discontinuous thinking - or recognising and breaking away from the outdated rules and fundamental assumptions underlying operations. These rules of work design are based on assumptions about technology, people, and organisational goals that no longer hold."

There are several basic factors in relation to the use of ICT that affect the digitisation of administrative procedure such as: technical development and use of new technical solutions; the level of digitalisation of the administration; the level of legal permissions on use of IT in administrative procedure (Lilic, Dimitrijevic & Markovic, 2004); the character of administrative matter, establishment of an environment for the safe and secure use of ICT, continuous assessment for promotion of advancements in technology, sustainable development of governments' informational quality, etc.

eGovernment, through the use of ICT, ensures participation and involvement of citizens, institutions, private and public sector in the decision making process of governance. Rather than just focusing on introducing ICTs, governments must also decide on, guide and control the transformation of government into eGovernment (OECD 2003). In this context there is a need to significantly redesign many areas of eGovernment activities – and to introduce relevant and flexible regulations relating to ICT in order to enable more effectively and efficiently public administration activities.

ICT needs to be incorporated into a package of modernisation, related changes and reforms (including greater teamwork, flexibility in working arrangements and remuneration and enhanced knowledge management practices) that challenge public administration's current internal governance frameworks. eGovernment co-coordinators should use ICTs as a tool to facilitate change, and should not attempt to restructure public administrations on the basis of current technology (OECD 2003). ICT can help reorganise existing processes and reduce duplications on one hand and enable an administrative environment favourable to citizens on the other hand, however, in certain cases it is difficult to assess if these changes have improved the overall performance of the public sector since in some projects several breakdowns were evident.

Stages of ICT use need to be fine-tuned to appropriate conditions. Therefore proper ICT implementation needs to be balanced by related changes to legislation, analysis of organisational structure and human resource management policies.

While it is evident that ICT is key element in modern administration and simplification of administrative procedures, the concerns, anticipations and capacities of administration differ significantly from one

country to another. In the area of ICT safety and security, it is relevant to promote research and development activities to overcome different obstacles with ICT, including failure prevention, social welfare, etc., in order to set up a safe and secure society and to provide a reliable information infrastructure.

6.1 One-stop shop system

One of the strategic goals of eGovernment is to improve the delivery of administrative services to the public and business. The one-stop shop (OSS) service model is one of the reform initiatives to achieve the objectives that have undergone the leading stages and now come to be implemented by governments as an essential segment of the country's public administration system.

OSS is considered as a self-contained office or outlet that provides almost everything needed to satisfy a customer order or request, complete a process (such as borrowing), or fulfil a requirement (such as information) (BusinessDictionary). OSS presents a company or a location that offers a multitude of services to a client or a customer. The idea is to provide convenient and efficient service and also to create the opportunity for the company to sell more products to clients and customers (Financial Dictionary).

The use of one-stop shops is perhaps the most common approach. In general terms, it involves setting up contact points where people and businesses can get all the answers to their query in one location. They are often used for the more efficient provision of business licenses. They provide a point where a business can get the entire required license and other information needed to set up and operate their business (OECD, 2009).

6.2 Implementation of one-stop shop

In general, OSS is a new approach to the provision of public services aimed at reducing the number of procedural steps involved by changing the mode of service. The essence of innovation is as follows: a) increase the transparency in the rules and procedures for providing services; b) save people's money and time; c) create modern facilities with convenient locations for the population; and d) provide quality services with qualified staff. In order to reduce the number of steps to be taken, files to be compiled, and contacts to be established in view of setting up a business, getting permits for the extension of buildings or receiving grants, many countries (e.g. France, Germany, the U.K., Italy) have set up one-stop offices (guichet unique). These consist of representatives (or just one representative) of different public administrations which deal with the above-mentioned undertakings, usually located in a single building and possibly at one single counter (Ziller, 2008).

As it is one of the most effective and widespread tools for administrative simplification, many countries in the world are presenting their experiences and exchanging ideas on how to successfully unify different demands into one, or into a reduced number of communication channels in order to enable more efficient and less expensive public services for the citizens. OSS delivers substantial savings in time and cost for users. The one-stop-shop concept has been driven by technological change and some transformation criteria.

The EU 2006 Directive on Services in the Internal Market requested that all formalities relative to business creation be carried through one-stop-shops in EU countries by three years after the entry into force of the Directive. In the past few years, 39 economies have created or improved a one-stop shop: 16 in Eastern Europe and Central Asia, 7 in Africa, 6 in the OECD high income group, 5 in Latin America and 5 in the Middle East and North Africa (Doing Business Report, 2009).

A single government website acting as a one-stop shop for eGovernment services makes it easier for users to find and access those services. Creating a simple organisational hub for eGovernment services, bundling them in a few (rather than many) portals has simplified users' overview of and access to services. Such an approach underscores the importance of having a fully integrated back-office where connectivity and inter-operability are secured for cross-organisational service solutions (OECD 2009).[1]

The OneStopGov project, funded by the European Commission through its IST Programme for research in the area of ICT, aims to specify, develop and evaluate a life-event oriented, integrated, interoperable platform for an all-inclusive one-stop government that is based on the concept of active life-event portals (Chatzidimitriou & Koumpis, 2011).

Even though the one-stop shop is considered as an engine to deal with administrative barriers to provide more streamlined and simplified administrative services, the experience with this concept is checked and not absolutely positive in many instances, including the disadvantages and challenges of both perspectives.

The experience of OECD countries has demonstrated that the implementation of one-stop shops can entail substantial practical difficulties. For example, they may shift administrative burdens rather than eliminate them, by creating more work for public officials. Difficulties might arise in trying to coordinate various one-stop shops and respond to consumer and business needs. One approach to help meet citizen needs and minimise coordination problems adopted in the United Kingdom is the provision of information on various important stages in a person's life (OECD, 2009).

One of the main pitfalls of one-stop-shops is that, in some cases, they cover only part of the procedures. It is important that a one-stop-shop doesn't become a "one-more-stop." Four different models can be distinguished. They can be either physical, as an information desk model, where information is given in a single place on procedures dealt with by various administrations, or virtual, as an access point through which citizens or entrepreneurs can find all relevant government information, ultimately, conduct a wide range of transactions with the government, or both (United Nations, 2009).

It is important to set up a clear strategy for implementation of one stop shop in order to identify the causes of the problems and obstacles that may lead to dissatisfaction of citizens.

6.3 Simplification of legal systems

Codification of administrative procedures is a way of responding not only to the question of decreasing burdens for citizens and businesses, but also of developing the rule of law, which, in turn, has a positive impact on economic development, especially in the context of the European Union (Ziller, 2008). Nonetheless, the vast majority of national administrative procedure laws dating from the second half of the twentieth century is now out of step with regard to their content and considered insufficient, their conceptual basis is for the most part obsolete, and their regulatory method is restricted to traditional patterns (Barnes, 2006).

eGovernance demands a collection and adoption of new rules, policies, regulations, laws and legislative changes in order to address simplifications in public administration. In addition, constitutional requirements, such as those derived from the rule of law and democracy must be adjusted to these new methods and scenarios (Barnes, 2009).

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1   Examples of countries pursuing a simple organisation of services are: Canada, Denmark Hungary, Mexico, the United States and the United Kingdom.

Proper codification of administrative procedures is one of the most powerful and effective sources of administrative simplification and decision making. The citizen's rights to "Good Administration" have their impact in simplification of administrative procedures, identifying proper measures to be considered and identified for simplification.

The success of eGovernment initiatives and processes are highly dependent on government's role in ensuring a proper legal framework for their operation. A requirement for eGovernment processes to be introduced and adopted is their formal legal equivalence with the paper process. OECD governments are aware of the need for the creation of a framework to provide for enforceable electronic transactions, both for eGovernment sphere and eCommerce, and have taken relevant actions (Basu, 2004).

United Nations Conference on Trade and Development has conceived a web-based eGovernment system to help developing countries and countries in transition work towards business facilitation through transparency, simplification and automation of rules and procedures relating to the establishment and operation of enterprises. This system can contribute to greater transparency and efficiency in the public service, improved governance and cost reductions (eRegulations.ORG, UNCTAD).

The European Commission started a research project "smart regulation in the EU" as a set of actions to create "quality regulations" for the highest quality of legislation in the EU-27. The Commission expects to make a first analysis of the smart regulation agenda in the second half of 2012. The project involves impact assessment procedures: both efficiency and simplification in decision-making becomes the priority of the Baltic States (Eteris, 2010).

Transparency of the legal systems as a model of decision-making seems a natural reaction to solidity and diversity. Therefore, updated laws on administrative procedures that keep up a correspondence with transformation of the society must set up transparent and decentralised procedures, in order to enable debates and control by interested parties, including the public on the processing and review of facts.

7. International practices on administrative simplification

In many OECD countries administrative simplification and eGovernment are seen as independent areas and are typically handled separately in different organisational units. Bringing these two areas closer in terms of policy formulation, instruments and institutional frameworks, is likely to create opportunities to exploit hidden synergies and common processes in support of overall modernisation efforts (eGovernment workshop, 2007). The OECD has been at the forefront of administrative simplification issues since the 1990s as a unique international forum where officials and practitioners share their experiences and techniques, thus accumulating knowledge. The 2005 "Guiding Principles for Regulatory Quality and Performance" set the bases for the work on administrative simplification (OECD, 2009).

World Bank has introduced the concept of good governance in the late 1980's in order to describe the transparent and efficient public regulation and service delivery. The World Bank approach set apart four crucial segments of governance such as: public sector management, accountability, rule of law and transparency. The World Bank Group has worked on measuring and benchmarking countries on enabling business environments. Part of these assessments is presented in the 'Doing Business Indicators'. The 'Doing Business Project' launched in 2002, provides objective measures of business regulations and their enforcement across 183 economies and selected cities at the subnational and regional level (IFC & World Bank).

An important eGovernance driver is the UN's Division for Public Administration and Development (DPADM), an institution promoting eGovernance development in UN member countries, widely recognised as the sponsor of the UN eGovernment Survey as well as other projects.

In the European Union, institutions have reaffirmed the high priority and relevance concerning simplifying and improving the administrative procedures. Within the scope of EU's Better Regulation policy, attention is paid to administrative simplification. This approach has now been developed in the EU and most OECD countries to the point where one can speak about a permanent public policy on administrative simplification (Donelan, 2008).

"Cutting red-tape", reducing the "administrative" or "regulatory" burdens on companies, "streamlining" regulation, "simplifying" regulation and "better" regulation are common terms applied to the policy drive taking place in many European countries to address the cumulative effect of these regulations (European Commission Enterprise and Industry Directorate-General, 2006). According to the OECD report "From Red Tape to Smart Tape" governments do not often have a detailed understanding of the total extent of the administrative burdens imposed on businesses and the public despite the amount of administrative simplification underway. Only a few governments have developed a methodology for measuring the size of the administrative burdens, applying either a top down approach based on government estimates, carrying out a bottom-up review of the sectors or based on individual estimates of the regulations' administrative burdens.

As a consequence of the European Commission's White Book on Good Governance (2000), a comprehensive programme for "better regulation" has been undertaken since 2004, intending to reduce the burdens of regulation upon the economy as a whole and especially upon businesses. This programme should have both a direct impact in EU administrative acts (i.e. regulations, directives and other EU law instruments) and an indirect impact in generating similar programmes at national level.

The European Union, is closely engaged and committed in administrative simplification strategies for over a decade now, and further analysis shows that those countries that are investing a great deal in burden reduction strategies are experiencing degreases in the restrictiveness of their product market regulations,. Some countries have had well-developed programmes on administrative simplification for several years, including structured measurement, while other countries are at an earlier stage of development of such programmes. The general perception is that quantifications of administrative burdens for citizens are strong political drivers for change (EUPAN, 2008).

In its communication on simplifying EU legislation of 25 October 2005 (COM, 2005), the Commission tabled a three year action programme for simplifying EU legislation. The Communication recognised that simplification could be achieved through different means including simple codification, repealing irrelevant or obsolete legislation, recasting of existing acts with a view to clarifying and improving consistency, and a modification of the chosen regulatory approach.

ICT Policy Support Programme (ICT PSP) is a major component of the EU's Competitiveness and Innovation Framework Programme (CIP, 2007-2013). It aims at a wider uptake and best use of ICT and digital content by citizens, governments and businesses. The main objective is to develop pan-European, ICT-based solutions and services, most notably in the areas of public interest. Currently, the running projects funded by ICT PSP in the area of eGovernment are PEPPOL (Pan European Public Procurement OnLine); SPOCS (Simple Procedures Online for Cross-border Services); ECRN (European Civil Registry Network); Rural-Inclusion (Rural-Inclusion: e-Government Lowering Administrative Burdens for Rural Businesses); eGOS (e-Guidance and e-Government Services); iSAC6+ (A unique European Citizens' Attention Service); eGovMoNet (eGovernment Monitor Network) etc. (European Commission).

The implementation of the first European eGovernment Action Plan has seen governments across all Member States exchange good practice. It resulted in a number of large-scale pilot projects which are developing concrete solutions for rolling out cross-border eGovernment services. Therefore, the Commission is proposing a second eGovernment Action Plan which aims to realise the ambitious vision contained in the Declaration made at the 5th Ministerial eGovernment Conference (the 'Malmö Declaration'), which was also supported by industry and by a citizens' panel. According to this ambitious vision, by 2015 European public administrations will be "recognised for being open, flexible and collaborative in their relations with citizens and businesses. They use eGovernment to increase their efficiency and effectiveness and to constantly improve public services in a way that caters for user's different needs and maximises public value, thus supporting the transition of Europe to a leading knowledge based economy" (European Commission, 2010).

The World Bank is embarking on a new ICT Sector Strategy that proposes an approach for scaling up the support to client countries, using ICT to unleash innovation across the economy and grow local ICT industries, and address the remaining gaps in the connectivity agenda. The proposed strategy of the World Bank Group focuses on three strategic directions:

a) connect; b) innovate and c) transform (World Bank, 2010).

The United Nations eGovernment Survey 2008: 'From eGovernment to Connected Governance' presents an assessment of the new role of the government in enhancing public service delivery. The results of the global survey indicate that governments are moving forward in eGovernment development around the world. However, given the high demands placed by eGovernment on a multitude of foundational pillars which include prerequisites of infrastructure, appropriate policies, capacity development, ICT applications, and relevant content that need to be in place to fully implement eGovernment services, progress is slow. Only few governments have made the necessary investment to move from eGovernment applications per se to a more integrated connected governance stage. In this regard, Europe shows a clear advantage over the other regions (ePractice.eu). Amongst the European leaders in simplification are Italy, the UK, Belgium, France, Switzerland, the Netherlands, Denmark, and Sweden.

The administrative simplification process of the Italian system got under way in 1993 by the placing on the statute book of Law No. 537 of 24 December 1993. Starting in 1997, and based on this new legislative complex, the new simplification instruments were brought into the operation (Filippi, 2003).

The French experience in simplification of administration has been a huge success. The French government has conducted a simplification policy which combines legal simplification and a reduction in administrative burdens. On 6 March 2000 was issued a "Circular on the simplification of administrative formalities and procedures" that sets new priorities and principles for the administrative simplification (ePractice.eu).

 An example of efforts to coordinate multilevel governance can be found in the United Kingdom, where the Local Better Regulation Office was established in 2008 to spread good practices at a local level throughout the country. The United Kingdom has developed guidelines for officials to produce regulations with which businesses can easily comply with. In the United Kingdom the better regulation website (www. betterregulation.gov) collects ideas from citizens, which are processed transparently and reported as to whether ideas were taken forward or rejected.

In Belgium the reform of the federal administration has been underway since the 1980s (see Table 2). These initiatives were aimed at boosting managerial and technical skills, improving flexibility

in the civil service, changing a procedure-based administrative culture into a performance-based culture, and shifting the focus to objectives in the delivery of public services. The later 1990s saw the beginnings of deeper reform (Cordova & Jacobs, 2004).

In the Netherlands the government decided to reduce administrative burdens on businesses by a net 25% in 2007. "By establishing a quantitative, ambitious and time bound target, and communicating this widely, the government accepted to be held accountable on a highly prioritised policy goal. The target has been divided among ministries and over years, thus providing a strong instrument for steering and monitoring simplification efforts across the administration" (OECD, 2007).

In Denmark, the government committed itself to reducing administrative burdens on companies by 25% in 2010.

In this respect, countries are gradually constructing their own administrative models and systems, drawing from both traditional bureaucratic and new public management approaches, reassessing and adjusting the model to bring it to development, and possibly moving closer to participatory governance.

The authors observe that public and private sector transparency and accountability are less apparent in countries where authoritarian rule prevails and where institutional reforms have not accompanied economic liberalisation efforts (Leenders & Sfakianakis, 2003).

In the transition countries, simplification of public administration is a fundamental part of the transition process. The modern approach to public administration demands the transformation of the State bureaucracy into a politically neutral, civil service characterised by professionalism.

ICT is seen as posing great potential for development in developing countries. However, it has also been substantiated that developing countries require tie-together ICT in order to support development. ICT is believed to bring great prospects for developing economies and their communities (Tejasvee et al, 2010). The World Bank has supported more than 100 developing countries to reform their ICT sectors, helping spur investment and modernisation that in turn accelerates economic growth and poverty reduction. It provided support for privatisation and liberalisation, and capacity building for governments and regulatory institutions. It has done so through policy loans, technical assistance project components, fee-based services, and policy dialogue (World Bank, 2011).

Simplification of administrative procedures in developed and transitional countries should be focused mainly in strengthening the rights of citizens and modernising the way the States operate. The steps toward the simplification should not rely in a single methodology but has to be focused on information concerning the different methodologies applied in the different countries and their advantages or disadvantages, and how to implement them. Pilot case projects and studies which are trying out different methods are highly recommended in order to get inspiration for further improvements.

While the numbers of good practices are growing there still remains a need for a better understanding and assessment of the impact and role of eGovernment and for effective standard to give policy makers evaluation elements for their decisions. Therefore, governments should be more focused on academic research and continued monitoring with existing indicators based on more qualitative methods for extensive progress.

8. Conclusions

The simplification of public administration procedures is a key objective for all countries towards the

improvement of public sector efficiency, effectiveness, performance, transparency, accountability and competitiveness. Lower administrative costs, reduced cycle time for processing of claims and payments, better cash management, improved data privacy and security, improved ability to detect fraud and abuse, and increased citizen gratification are considered to be benefits of administrative procedure simplification. Decrease of paper work has an important role in the simplification of the public administration in the process of transformation from the public administration that creates obstacles to the efficient and effective administration.

Governments need to settle into new developments and new strategies in order to enable them to implement with success their aims and to respond to the increasing demands of the community. This means that governments should establish new mechanisms or strengthen those that are already in place to enable them to sustain government action and to release the situation. The mission of these mechanisms would lead towards the comprehensive simplification of public administration.

eGovernment should be viewed as a crucial approach for the public sector reform and simplification process. Implementation of eGovernment is an integrated element of the strategy for administrative simplification, while citizens' engagement and transparency is of the utmost importance in the information age. However, the process of simplification cannot be completed in a matter of days, weeks or months. The process takes time starting from the preparation stage, implementation process and proper assessment. The arrangement of the use of advanced ICTs, especially the Internet, and the accessible eServices over different channels, constitute the basis of eGovernment and simplified public administration.

21st century public administration requires new segments for coordinating government agencies to ensure that they seek to solve the problems they face on a daily basis. The transparent engagement of experts on different committees is of the utmost importance for open discussions on the different administrative matters that demand expertise, opinion and evaluation of facts.

Many of the administrative simplification tools and practices applied to improve the efficiency of administrative regulations also lead to, or are supported by measures that improve transparency and accountability, and therefore reduce the risk of corruption.

ICT is a crucial and fundamental tool of every modern state's simplification process that enables increasing public sector productivity and efficiency. A better use of IT tools could facilitate most of the stages related to the administrative process, increase use of multimedia systems of databases and improve the effectiveness of the entire achievement.

The One stop-shops (OSS) service model is considered as one of the reform-guiding principle to change the bureaucratic system into one that is more responsible and transparent. In addition OSS is an important measure aimed at reducing red tape. However, in practice such an optimistic concept of the OSS has been demonstrated as unrealistic for many governments while they faced considerable resistance by different agencies responsible for different public services.

Lack of political support, cooperation, strategies for simplification, limited resources, legal complexities, lack of understanding the importance of administrative procedures, lack of standardisation of procedures, lack of measurement and evaluation mechanisms could be considered as barriers and challenges for the administrative procedure simplifications.

The successful fulfilment of simplification objectives should be followed by extensive assessment and analysis related to: adequate training of involved staff, testing of electronic devices, monitoring of improvements and quality of services provided to citizens, monitoring of different projects related to the simplification procedures and risk management combined with service level standards.

Regardless of improvements which have been achieved in this aspect up to date there is still a need and a lot of opportunities for further simplification and increased flexibility. There is a need to develop different mechanisms through incremental improvements on a continuous basis for further progress.

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Trends in practices: eGovernment solutions from the EPSA 2009 experience

The European Public Sector Award (EPSA), organised by the European Institute of Public Administration (EIPA) and supported by several European countries and the European Commission, brings together the official motto "the best, most innovative and efficient performers from all levels of the European public sector". EPSA acts as a consolidated excellence network of public actors whilst offering a learning platform to disseminate leading-edge solutions. Within this framework, Information and Communication Technology presents a key tool to stimulate transformations within public administrations in order to provide better public services. In fact, the European eGovernment philosophy and the EPSA purposes are quite similar, as they both promote the change of behaviour so that public services are delivered more efficiently, more quickly and at lower cost to citizens and businesses.

European public administrations have implemented deep reforms to increase efficiency and effectiveness, reduce bureaucracy, simplify procedures, reallocate resources and increase overall quality of the public services provided. All over Europe, public bodies have developed institutional and policy frameworks to promote trust and transparency in government, enhance and facilitate access to information, create spheres of public consultation and ultimately seek to engage stakeholders in the making of policy decisions and/or the service delivery.

EPSA is a valuable tool to progress, a driving force to innovate and improve performance within European public administrations. This article describes the main eGovernment trends drawn from the EPSA 2009 applications, trying to shed more light on the current megatrends on eGovernment throughout Europe. The focus of the analysis has been kept on the reforms made to improve organisational processes within the public sector and to empower public services' users. Sources and inspiration for this article have been the EPSA 2009 publications (research report & catalogue), the best projects' full dossiers and the evaluation summary notes from the multi-step assessment and selection procedure.

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" By highlighting exemplary models of innovative public performance, EPSA - as the first European learning platform for public administration - creates an arena in which Europe's public sector institutions can excel and become role models for the rest of the world. "

1. Introduction: The EPSA at a Glance

Over the last decades European societies have faced numerous global challenges - an ageing population, climate change, the depletion of natural resources and a widening social gap, to name only a few. These circumstances have led to the transformation of the way we interact with each other, with the public sector, as well as with the private one. In line with such changes, the new socio-economic, environmental and political factors have to be taken into account by European public administrations, against the backdrop of diminishing resources.

These new challenges are strong drivers of change, as they demand transverse and profound reforms to adapt to the new context. Moreover, they generally cut across traditional boundaries of government departments, and in some cases of the responsibilities of different levels of government. The ultimate purpose of the different reforms is to make governments more responsive to society's changing needs and demands. In this sense, Information and Communication Technology (ICT) has played a crucial role during the last 15-20 years. ICT offers many opportunities for public administrations across Europe to get engaged in transformational processes, usually leading to more efficient, effective and innovative delivery of public services.

1.1 The EPSA and eGovernment: A "Love Story"

The European Public Sector Award (EPSA) is organised by the European Institute of Public Administration (EIPA) and supported by several European countries and the European Commission. It aims to serve as a driving-force for progress within public administrations. It was first successfully launched in 2007, with the aspiration to create an arena in which Europe's public sector institutions could excel and set an example for the rest of the world. The ultimate goal was to motivate administrations throughout Europe to learn from the best practices of others and to fundamentally modernise their methods and structures. It thus serves as a catalyst for progress in addressing Europe's most pressing concerns.

This year EPSA celebrates its third edition (EPSA 2011) by bringing together the best, most innovative and efficient performers from all levels of the European public sector. With the objective to make valuable experiences transparent, available and usable, the EPSA already acts as a consolidated excellence network of European public actors whilst offering a learning platform to disseminate leading-edge solutions for the public sector. Within this framework, ICT presents a key tool to stimulate transformations within public administrations to provide better public services to citizens and businesses (European Commission, 2010a). In fact, the general European eGovernment philosophy and EPSA purposes are quite similar, as they both promote changing behaviour so that public services are delivered more efficiently, more easily, more quickly and at lower cost to the people who need to use them (European Commission, 2010a).

EPSA does not exclusively aim to identify the best eGovernment projects in Europe (this objective is attained by the well known European eGovernment Award scheme), but it encourages projects to show a great leap of change and innovation in the way public actors are practicing their tasks. And in this context, a general incentive to apply with projects considering ICT-enabled solutions is stated. This article will show how ICT-enabled solutions and innovative practices from EPSA are closely inter-related and will try to draw several (mega) trends in and from practices.

2. The EPSA 2009: Facts and Figures

Europe is diverse and so are the challenges that European public administrations face, as well as the

resources they count on. In this sense, the EPSA 2009 Scientific Advisory Board (SAB) together with the EIPA's faculty staff identified, formulated and recommended to the EPSA Steering Committee (SC)[1] a number of thematic areas addressing Europe's most pressing current public concerns. For the 2009 edition, out of all proposals suggested to the Committee four themes were finally selected that would allow all European administrations regardless of their cultural context, size or administrative level to identify and propose their public achievements.

In 2009 applications were submitted in four different thematic categories:

1. **Theme I:** Performance Improvement in Public Service Delivery,

2. **Theme II:** Citizen Involvement,

3. **Theme III:** New Forms of Partnership Working,

4. **Theme IV:** Leadership and Management for Change.

An impressive number of applications, i.e. 304 applications from 28 European countries and the European Commission were finally received, of which 300 were eligible and capable to win the trophy.
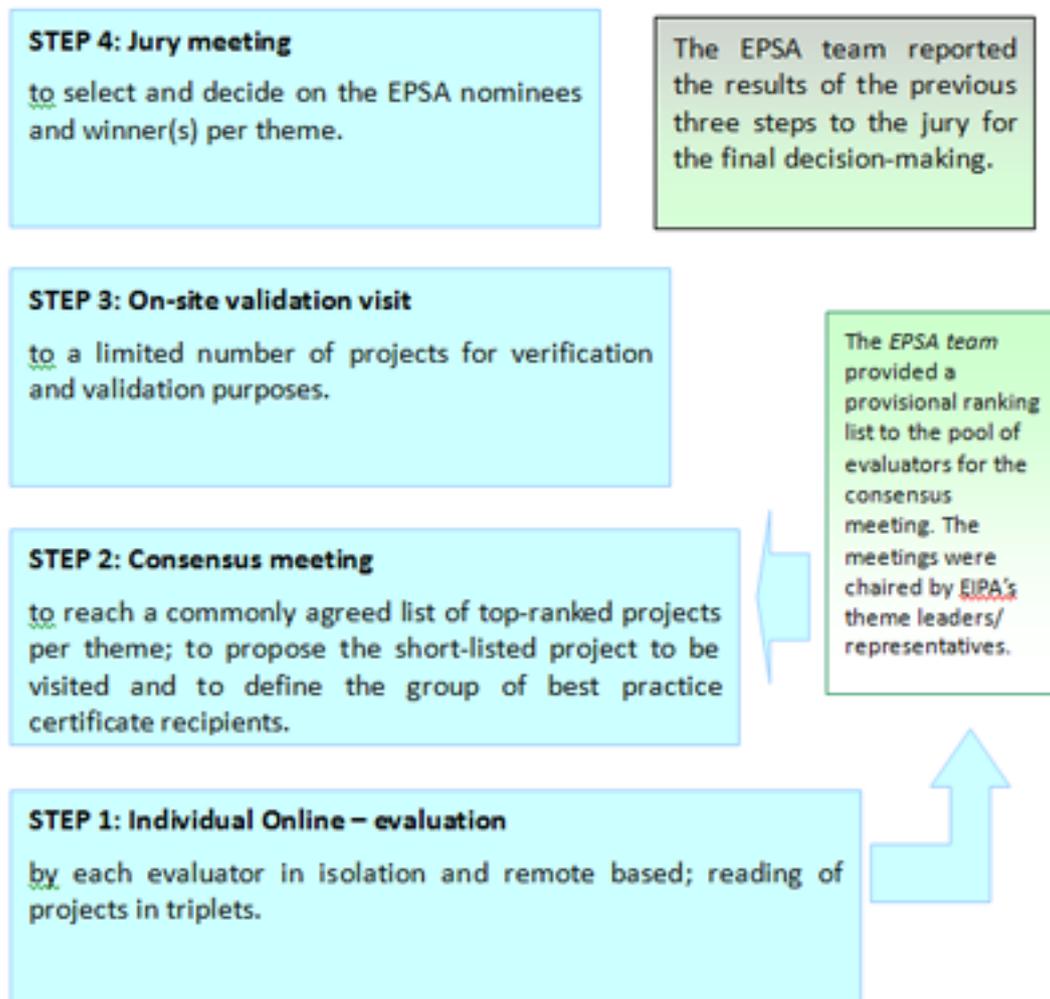
	Eligible applications	ICT-based applications[*]
Theme I Performance Improvement in Public Service Delivery	128	50
Theme II Citizen Involvement	48	19
Theme III Partnerships Working	81	21
Theme IV Leadership and Management for Change	43	11
Total	**300**	**101**
(Footnote)		
* Number of applications for whom ICT played a major role.		

From the 300 entries, 4 winners, 20 nominees and 40 best practice certificate holders were chosen. Two thirds of the applications were submitted by local and regional bodies and more than 200 of them had organisations with a size of 100 and more staff to back them up. These figures make this award an interesting instrument in monitoring European public administrations in terms of where innovation is actually initiated or what kind of resources are needed for this. In addition, it provides a solid basis from which recommendations for the future work of public administrations can be sketched out.

2.1 "The Winner is…" – The Multi-Step Impartial Evaluation Methodology

The evaluation methodology used to select the best practices and the final winners follows a multiple-step impartial and independent process: (1) an online evaluation, (2) a consensus meeting, (3) onsite visits to a small number of short-listed projects per theme, and (4) the final selection of award winners by a jury of political personalities.

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1   The EPSA Steering Committee is composed of the representatives of the European countries and the European Commission officially supporting the scheme.

STEP 4: Jury meeting

to select and decide on the EPSA nominees and winner(s) per theme.

The EPSA team reported the results of the previous three steps to the jury for the final decision-making.

STEP 3: On-site validation visit

to a limited number of projects for verification and validation purposes.

The *EPSA team* provided a provisional ranking list to the pool of evaluators for the consensus meeting. The meetings were chaired by EIPA's theme leaders/ representatives.

STEP 2: Consensus meeting

to reach a commonly agreed list of top-ranked projects per theme; to propose the short-listed project to be visited and to define the group of best practice certificate recipients.

STEP 1: Individual Online – evaluation

by each evaluator in isolation and remote based; reading of projects in triplets.

During the first step of the evaluation (done exclusively online), each submitted application per theme was evaluated by three experts (assessment in "triplets"), in a completely independent and autonomous way. Each evaluator was automatically allocated a fixed amount of projects within a concrete theme, according to his or her academic and professional background, nationality, gender and language skills (active and passive). Evaluators did not know each other before and were not informed prior with whom they are forming the triplet.

At the consensus meeting, the second step of the evaluation process, all evaluators participated and reviewed as well as discussed the first provisional ranking and their individual scoring. This evaluation step was coordinated and chaired by the four EIPA Theme Leaders. However, they did not evaluate projects themselves, only mandated to guide the meeting. At the end of this step, a commonly agreed and consensual final list of ranked projects per theme was available. Based on the results of the second step, a short-listed number of projects were visited by EIPA representatives -the third step of the evaluation process– for validation and verification purposes.

Finally, a group of selected jury members (European stakeholders and political personalities different to the evaluators) assisted EIPA to select the final award winners per theme (the fourth step of the evaluation). In this context, a final nominee or winner must have been drawn from the group of visited projects.

2.2 What drives – criteria – public excellence and how to identify it? How the EPSA applications have been judged against?

The submitted applications were first checked against eligibility. If the criteria set out in the Terms of Reference (ToR) have been met, a registration number has been allocated, and the project was then subject to evaluation. In the assessment, each evaluator relied on the data/information/output provided in the standard application form.

The EPSA motto is to *"bring together the best, most innovative and efficient performers"* from the European public sector. If a project aimed/claimed to be *"innovative, efficient etc."*, it needed to have accumulative positive and important evidence/results/merits regarding both the 5 general criteria (i.e. innovation, public concern, relevance, impact and learning capacity/transferability) and 3 respective specific theme criteria/evaluation dimensions (see Annex 1 for a detailed description of the criteria).

In this context, the attempt was to identify in the project description the key "enablers" which make the application/project a success (story) – innovative, efficient, excellence etc. and to carry out a critical judgement/assessment of value on the obtained information/results, i.e. a qualitative measurement. The evaluation was not based on the amount of detail, neither on the quality of the writing, nor presentation of the case. The judgement was mostly based on the quality of what the case has achieved and the lessons learnt. Sufficient detail must have been provided to convince the evaluator(s) of this. Thus, the aim was not – for instance – to know necessarily the precise or right number regarding an evaluation dimensions (e.g. results, lessons learnt), but to sort out – when assessing – if it is a large or small number/impact on the basis of the available information retrieved from the project application form. An explanation field after each criteria allowed to collect and store the comments of the evaluators on their scoring and their reasoning behind.

In summary, the best projects selected as winners and/or shown in the list of best practice certificate recipients per theme have offered a sound and clear overview of the project performance against the set of (8) criteria.

3. EPSA 2009: A European eGovernment Observatory?

While screening the 300 eligible applications, it becomes apparent that the majority of government bodies in Europe, regardless whether they are of local, regional, national or even transnational level, rely on new technologies when aiming to improve their performance. However, this does not specifically mean that all public administrations use ICT equally. The 2009 edition of EPSA has taken the pulse of European public administrations and has shown that not all of them make the same use of these means. Every single administration has a concrete culture and its own administrative tradition which needs to adapt to the immediate environment, specific needs, resources and capabilities; in short, to its particular context.

Key findings from this edition have already been published in the EIPA research report *Taking the Pulse of European Public Administrations*,[2] issued in 2009. Whereas the EPSA research reports sketches several general trends in public administrations, this article focuses on the EPSA 2009 practices with a strong eGovernment component. Taking a closer look at the themes, it becomes clear that the most advanced levels of eGovernment applications can be found in Theme I *Performance Improvement in Public Service Delivery* and Theme II *Citizen Involvement*.

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2   Pröhl , M. & Heichlinger, A. (eds.) (2009). Taking the Pulse of European Public Administrations, Key Findings of the European Public Sector Award 2009, Maastricht: European Institute of Public Administration.

Theme I, **Performance Improvement in Public Service Delivery**, embraced all projects willing to include elements of increased efficiency and effectiveness, reduced bureaucracy, simplified procedures and increased quality of the public services provided. The public sector needs to reinvent itself in order to meet the current challenges and to make governments more responsive to society's demands. European administrations from all levels and countries have reacted differently to this new context, and proposed diverse reforms to cope with such challenges.

Theme II, **Citizen Involvement**, was dedicated to the opening up of the public administration towards collaboration with citizens, allowing more transparency and public scrutiny at all levels, following private sector models of consumer involvement in business planning and delivery (EPSA 2009b). This topic intended to emphasise strategies to involve users in politics and political life, so as to facilitate, encourage and enhance their active participation in decision-making processes and to develop a closer relation between European governments and their citizens. These goals can be substantially facilitated nowadays by the technological developments of ICT, as they allow an interactive communication between public administrations and citizens and enterprises in a way that was not possible ten years ago.

As a consequence of all the aforementioned, out of the 128 projects submitted under Theme I, almost 50% (50 cases) were ICT based. In this category 24 projects received recognition, either as nominees or as best practice cases. Among these top ranked projects, 15 represented eGovernment practices. In other words, 62.5% of all the awarded applications under Theme I were eGovernment cases: 60% out of the nominees and 63.2% out of the best practice certificate holders.

Under theme II a similar result is drawn, i.e. 19 of the 48 projects submitted were ICT based (39.6%) and out of the 10 recognised applications, 6 were eGovernment cases (60%), which means 40% of the nominees and 80% of the best practice recipients.

Theme I and II give thus a good taste on the wide application and use of ICT as a tool to improve public administrations, either by helping to reorganise internal processes or by enhancing their transparency and accountability towards public services' users. Both topics are directly related to the relevant pillars and priorities of European eGovernment initiatives, namely user empowerment and more efficiency and effectiveness of governments and administrations as boosted by the new eGovernment Action Plan 2011-2015[3] which was recently launched by the European Commission.

In comparison, projects submitted under Themes III and IV (not classical themes of eGovernment) are only to a lesser extent related to technological aspects and thus present lower statistical figures when taking into consideration eGovernment features. However, it is hardly imaginable to carry out future projects in these areas without counting or considering eSolutions. Due to the predominance of eGovernment practices in Theme I and II, the EPSA (mega)trends and tendencies will be drawn from these categories.

4. The EPSA (mega)Trends and Tendencies based on Practices[4]

As the European Commission stresses in its last eGovernment Action Plan, governments need to provide better public services with fewer resources (European Commission, 2010b), especially within the current economic context. Reforms have been made at all stages and in all fields of public

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3 European Commission (2010). The European eGovernment Action Plan 2011-2015. Harnessing ICT to promote smart, sustainable & innovative Government, retrieved February 7, 2011 from <http://ec.europa.eu/information_society/activities/egovernment/action_plan_2011_2015/docs/action_plan_en_act_part1_v2.pdf>.

4 It should be noted that the European Public Sector Award is a competition in which participation is voluntary, so that EIPA makes no claim that the process represents a comprehensive survey of applications across Europe.

administrations to improve their performance. This is precisely one of the key findings of the EPSA 2009, i.e. the evolution the public sector has made: reform processes have shifted from a producer perspective to a user-centred perspective focusing on citizens and enterprises. Now citizens and businesses are not only the passive, constrained recipients of services, but are considered the most important part when thinking of public services.

Such reforms or adaptations to the current situation have had two principal guidelines: the improvement of public administrations' performance and the empowerment of services' users, citizens and businesses. These two main aspects correspond to Themes I and II, thus general trends in European eGovernment solutions can be drawn from the applications.

Two main outcomes are to be highlighted: (1) public administrations are internally improving their organisational processes so as to become more efficient and effective; (2) public administrations need to involve their citizens and businesses in the decision-making processes, and public services need to be ultimately designed in collaboration with their main users. These are the EPSA (mega) trends that will be further analysed, and supported by good practices taken form the award which will help to exemplify these tendencies.

4.1 Improving Organisational Processes – The EPSA eGovernment (mega) Trend Number One

One of the main consequences of the introduction of ICT in public administrations is that processes can and should now be reinvented to become more efficient and effective. Governments must take the chance to deliver more dynamic, faster and better public services to their citizens and businesses. In fact, this has always been one of the main priorities in all European eGovernment strategies over the last decade (eEurope 2002, eEurope 2005, i2010).

The projects submitted under Theme I mainly used ICT to minimise the administrative procedures and improve the service delivery to citizens and businesses (Pröhl & Heichlinger, 2009). As it can be observed, reforms along these lines not only modernise the way public administrations work, they also ultimately enable citizens and businesses to interact with their governments in a more effective and efficient way, at the same time that resources and efforts within public administrations are better allocated. Hence, a smart eGovernment implementation always results in a positive-sum game.

Furthermore, the optimisation and restructuring of internal processes certainly gives rise to other advantages, such as a limitation or even a reduction of the general costs and a better and faster delivery of services. Such transformations would, in turn, increase the overall satisfaction of citizens and businesses using public services and the accountability of governments involved. Moreover, ICT-enabled solutions also have the potential of strengthening local, regional or national economies, by boosting R&D and innovation, which in turn increases overall GDP.

There are several ways reforms can be implemented, just as the outcomes of such reforms may vary, as may the levels of government where they are applied. Usually, the reorganisation of internal processes intends to optimise public administrations **back-offices**, by simplifying transactions, interconnecting departments, reducing the administrative burden, and making them more efficient and effective. This, in return, improves **front-offices'** image as they can answer in a faster, more efficient and better way. At the same time, front-offices are increasingly moving from the physical world to cyberspace which optimises even more the services users benefit from. The most relevant applications in this direction have ranged from the known 'one-stop-shops' concept to the establishment of virtual markets for public administrations.

Several interesting cases underline these developments, such as:

- **Guichet.lu**, a project from the Ministry of Public Service and Administrative Reform of Luxembourg, where citizens can complete their administrative tasks online, create an electronic identity and make secure electronic exchanges;

- The **Integrated online portal for SMEs** case, a project submitted by the City of Düsseldorf introducing an eMarket place.

Both were awarded as best practice cases in the EPSA 2009 edition. The winner under theme I was *eBourgogne, a Regional platform of eServices for all*, an excellent example of improving organizational processes.[5]

4.1.1 Guichet.lu

In Guichet.lu (LU) (www.guichet.lu) the one-stop-shop for services has been transferred to cyberspace. The aim was not to replace the traditional physical offices, but to diversify access and to better respond to the current challenges, gathering all the procedures, forms and information of the Luxembourgian administrations in one single URL. The project was labelled as innovative during the evaluations because it contained a comprehensive online realisation of public services with an interactive platform, electronic identification, a problem-related navigation system, etc. which had a special forward-looking degree because of the enrichment of the internet services.

The Luxembourgian practice allowed diversified access to public services, improving the value and quality of public services and making the administrative tasks easier for citizens. In addition, it offered a transparent access on two different levels, namely information and transaction level. Equally important, Guichet.lu had a high relevance because it involved many institutions and was thus a platform. From an outcome orientation point of view, the project was focused on a comprehensive concept of internal reform and organisational change achieving optimal service for the citizen.

4.1.2 Integrated online portal for SMEs

The Integrated online portal for SMEs (DE) (www.duesseldorf.de/egovernment) project, a German local project presenting an advanced internet-based system offering small and medium-sized enterprises a single point of contact for support and services included similar features and trends. The novelty of the solution consisted in integrating the links of the services for companies in view of the modernisation of administration in a unique portal by implementing the technological innovations. Furthermore, its public concern was valued important, as this project complied with important European documents about the services in the internal market, while contributing to the promotion of eGovernment.

Increased accessibility and transparency, solved via this project, as well as the creation of new jobs represented (and still represent) important priorities on the agenda of public organisations. In general terms, Integrated online portal for SMEs modernised the administration for companies and thus reduced the administrative burdens for them. The simplification of the administrative procedures saved time and costs and also strengthened the competitiveness in the local economy. The project used new technologies to improve the quality of public services, and hence reduced the administrative expenditures etc., contributing to German/European competitiveness in the global context.

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5   The Italian eMarketplace project (MEPA) by Consip Spa is for instance another outstanding example of this trend (and a EPSA best practice certificate recipient), but not explicitly explained here since it was one of the 2009 European eGovernment Award winners and thus has been dealt with in many communications already.

4.1.3 Regional platform of eServices for all: eBourgogne

The overall winner under Theme I was the Regional platform of eServices for all: eBourgogne (F) (www.e-bourgogne.fr) project, a single regional platform that offers SMEs a unique web access to all public markets. Within this practice, all public institutions in a region joined and created an eMarket place. The services were fully user-oriented and tailored in function of expression of needs, given by its working groups. In addition, its GPL license allowed other regions to enjoy benefits of the work already performed without having to pay connected fees. It was thus very innovative in terms of its approach and is already known and a reference to both European neighbours and the EU institutions.

One of the first consequences of this redesigning of organisational processes has been the cutting of red tape. In addition, the use of taxpayers' money was significantly better as fewer public markets were unfruitful and the prices were lower (EPSA, 2009a). Thanks to this new method, environmental issues were tackled, as the old, highly paper-consuming system was fully digitised and systematised. Nowadays, eBourgogne is also a one-stop-shop for all public aids dedicated to the SMEs in the region, 'j'entreprends en Bourgogne' and is successfully deploying new user-friendly services such as: electronic workflow for signature of documents, eTransmission of legal documents to the control of legality, website for small municipalities, geo-tagged services in proximity with practical information, etc. (EPSA, 2009a).

The public concern of this project was highly valued, because the development of the virtual marketplace responded to a requirement of rationalisation and simplification of the administrative procedures, by developing eCommerce, using IT instruments in the economic operations and providing electronically the administrative services. eProcurement saves public money and facilitates the purchase of quality products and services. The modernisation of public administration has become a reference for France through the use of eBourgogne, involving the stakeholders from the public and private sector. The model could even be adopted throughout the world. One of the main leading-edge aspects of this application was that no organisation owns it, but the users.

eBourgogne, a time- and money-saving online system of front-offices that facilitates enterprises accessing public markets, not only reduced the administrative expenditures, but also optimised the quality of services, boosted the development of eServices and increased the number of users. Above all, it improved the performance of the regional public administration. In a nutshell, it was a fine example of innovative thinking, partnership, use of technology, improved public service delivery and efficiency. It demonstrated the benefits entailing a rethinking of public internal processes, unification of access points, and joining-up of services, making it easier for the users to carry out their transactions with public administrations in a faster, cheaper, and better way.

4.2 Users' Empowerment – The EPSA eGovernment (mega)Trend Number Two

Enabling citizen involvement in debating, discussing, deciding and evaluating on governmental and public administrative decision-making is one of the other main priorities of European governments. eGovernment initiatives along these lines vary from only publishing information on public websites to the real users' participation in the policy and services' design through consultation and feedback between administrations and their citizens and businesses. Consequently, the EPSA 2009 Theme II was looking for projects from the public sector displaying the paradigm shift from 'government' to 'governance', which consists of increasing community participation and social capital, improving service delivery, promoting social inclusion and addressing perceived democratic deficits (EPSA, 2009b).

Although eGovernment was not an explicit part of the evaluation criteria, it is striking that almost 90 % of all the projects received had used, featured or were based on internet and web-applications (Pröhl & Heichlinger, 2009). In most projects, these eGovernment tools were mainly used for information purposes, but some projects had already extended their scope by using them to significantly enhance users' involvement by providing feedback or consultation mechanisms (Pröhl & Heichlinger, 2009).

4.3 Involvement of citizens and businesses in policy-making process

As described above, a clear trend towards eGovernment solutions to empower users in decision-making processes, with an incipient trend towards collaborative production of eServices, was detected throughout the applications. For the varying degree of citizen involvement, the three-fold categorisation developed by Pissarius and Bass (Pröhl & Heichlinger, 2009) has been extended and adapted for this article:

1. eInformation
2. eConsultation
3. eDecision-Making
4. Collaborative production of eServices

Figure 1: 3-level of involvement at policy cycle stages.
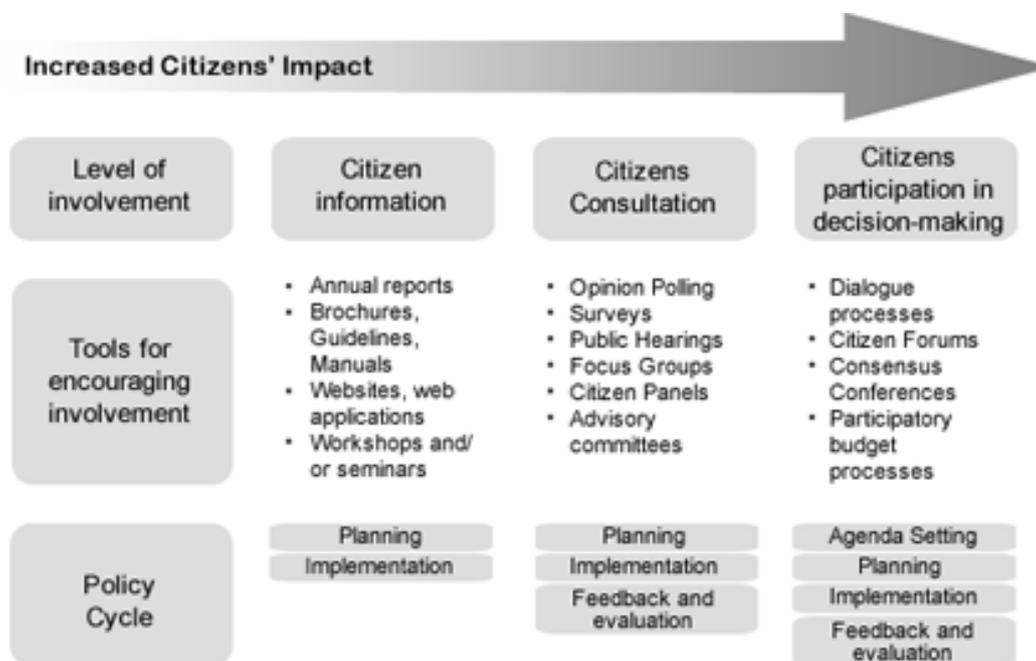
4.3.1 eInformation and eConsultation

Terzo Veneto

The *Terzo Veneto* (IT) (www.terzoveneto.it) application consisted of the eDemocracy portal of the Regional Parliament of Veneto and aimed to inform citizens about parliamentary election processes and to promote citizen participation, giving them a tool to coordinate their initiatives and to animate the local political debate. Initially, the original purpose of the eDemocracy Office and Portal was to support the processing, implementation and the updating procedures of the two main regional

governance tools: the RDP (Regional Development Programme) and the RCS (Regional Coordination Scheme), but over time the functions of the Terzo Veneto portal were significantly extended.

Next to traditional tools for information sharing like newsletters and email, the project applied a range of web 2.0 and ICT tools to enhance citizens' participation. Instruments like newsletters, a video game, a YouTube channel and a citizens' dictionary were all examples of innovative information tools as these are processes of one-way interaction where the public administration communicates information to its citizens. It is for all these reasons that Terzo Veneto is a good example of eInformation and eConsultation.

4.3.2 eDecision-Making

Governance Plan of Cantabria 2008-2011

The Governance Plan of Cantabria 2008–2011 (ES) (www.plandegobernanza.com) proposed an innovative mechanism to draft the Strategic Government Plan based on transparency and citizen's consultation, combining both the political priorities of the regional government and citizen's priorities. The Governance Plan was structured through strategic guidelines and organised more than 300 projects that had to take place in the region of Cantabria.

The drafted plan was based on the following mechanisms:

1. At a quarterly basis, surveys investigated the individual opinion of a sample of 1 800 citizens aged over 18 on the achievement results of the different strategic guidelines of the plan (e.g. degree of accomplishment, individual interest in specific action). These surveys consisted in standardised, anonymous and individual questionnaires and interviews.

2. In addition to the citizens' surveys, a series of sophisticated key indicators had been designed to measure the degree of fulfilment of any governmental action included in the plan. A summary of the results of the different governmental actions and their achievement indicators were published quarterly on the government's interactive website so that citizens could inform themselves on the accomplishment of the governance plan.

3. Finally, the constant public eUpdating of the government's progress and achievements in view of the governance plan gave citizens and businesses a powerful position to intervene and monitor all governmental actions. Furthermore, users were invited to submit their opinions on the performance of the government. This was done through an electronic form available on the government's website. As a result, an evaluation was received and relevant actors could proceed with citizens' feedback properly, in order to improve gradually.

With the help of these tools of measurement, public managers could compare the data and redirect strategic lines depending on discrepancies between the indicators and the assessment from the citizen surveys. Consequently, users were involved in the governmental plan design and in the monitoring/ measurement of the plans execution and results (Pröhl & Heichlinger, 2009). This approach is highly innovative as it was the first time that a government in Spain involved citizens in the evaluation of their accomplishment of strategic political priorities. In addition, the scale of this project was very ambitious and remarkable since the governance plan included holistic concepts and measures for a whole region, and not simply detached and isolated actions. Their excellent achievement was recognised with a nomination as Nominee under this theme.

The Cologne participatory budget: eParticipation of citizens towards Cologne's municipal budget

The winning practice of Theme II was The Cologne participatory budget: eParticipation of citizens towards Cologne's municipal budget (DE) (www.stadt-koeln.de). This pilot project, carried out in 2008, involved citizens via the Internet to participate to the city's budget plans. The goal of the project was to provide understandable and comprehensive information about the budget, to raise awareness among the population about the topic, to enrich budget suggestions by citizens' comments, to enhance transparency in budget-related matters and to generally improve communication between citizens and public administration.

During four weeks, citizens had the opportunity to co-design the city's budget in the areas of 'roads, lanes and public squares', 'public green spaces' and 'sports'. This project managed to involve a high number of people (10 231 participants) and reached out to very diverse groups of the city's population. The diverse outreach of citizens was achieved due to the extensive public relations campaign of the city of Cologne involving long-running ads in the print media, radio and TV, as well as letters to all Cologne households. Moreover, access barriers were set very low, allowing citizens to submit contributions not only via the Internet, but also by mail and via the call centre. In addition, the participation platform was designed to be easy and self-evident.

As a consequence, the take-up by the citizens of the proposals of the town hall was rather high. Out of 300 of the most interesting and mostly commented proposals chosen, 80 % were finally implemented by the City Council. The whole process was highly interactive as public officials also commented citizens' proposals and suggestions explaining why some proposals could not be chosen or why their implementation would require more time and more resources.

The Cologne participatory budget went much further than only providing citizens with information and consulting them. This practice also involved people in the active monitoring an implementation of the budgetary plan (Pröhl & Heichlinger, 2009). Citizens were enabled to follow the whole administrative and political process from designing the proposal and the implementation until the feedback and evaluation/monitoring. The involvement of citizens in all phases of the policy cycle as well as the constant interaction with public officials made this project an outstanding example of collaborative governance and deserved to be the winner of theme category II.

4.3.3 Collaborative Production of eServices

The ultimate stage of users' involvement, the joint design and production of eServices, was detected in some of the 2009 applications. It can be clearly stated that the value, quality and the public success of eGovernment services are enhanced if there is a shift away from a producer perspective to a user-perspective. This does not only include another shift in interests from the 'back-office' (re-engineering, simplification or administrative burden reduction) to the 'front-office', but above all includes the prime 'users' of public authorities in the service production and its subsequent delivery. The introduction of ICT in public administration has brought unique opportunities for more efficient and dynamic work, opening the door to innovation and finally the better delivery for public services.

ICT also enables the deployment of new channels of service delivery. This may bring about two parallel phenomena: on the one hand, the disappearance of services (and service modes) which are no longer necessary; and on the other hand, the creation of new services responding to new demands. If done properly, the phenomena make it possible to reallocate resources to areas where they become more necessary. From the user's point of view, they alleviate the perspective of 'having (only) to comply with administrative obligations' towards 'taking own initiatives'. The opportunities to enhance this initiated process is now facilitated by the ways in which the citizens/businesses are

no longer just users, but can play an active role – based on the so-called 'collaborative' or 'joint' approach.

The potential of the information society to remove accessibility and interaction constraints, very relevant in light of the location decisions to create a dynamic and evolving, hence competitive locality and advantages, needs to be further boosted and demonstrated. The EPSA 2009 Theme II and its practices offered solutions that attempted to adapt private sector models of consumer involvement in business planning and delivery, but also to advance concepts of 'open government' and 'active citizenship', ultimately allowing the users to engage in the planning and delivery of public services. In the more advanced versions of collaborative eGovernment, citizens help to structure eGovernment services online. In this way, it can be ensured that eGovernment processes fit the needs of the main target groups.

Kaufbeuren-Aktiv

One of the awarded cases that started to explore and exploit this concept is the Kaufbeuren-Aktiv (DE) (www.kaufbeuren-aktiv.de) practice submitted by the City of Kaufbeuren, described as a coordinating body for the purpose of social engagement, social capital, volunteering and good governance (EPSA, 2009a). Within this framework, citizens get in contact and can share their project ideas and receive professional support for their implementation. Citizens were directly involved in the developmental process of the municipality, as they could openly address public bodies without having to follow specific rules or regulations. This 'factory of ideas' combined different innovative tools and approaches in order to stimulate citizen involvement in the city's management (and service delivery).

Kaufbeuren-Aktiv managed to strengthen public participation through volunteering and networking, addressing the new challenges by joint efforts of the administration, citizens and the private sector. Stimuli for citizen participation and contribution were given and strong cooperation between public authority and civil society was demonstrated.

These projects that were mutually implemented (and delivered) by citizens and public administrations have provided visible results and value to both the public sector and general society while raising their creative potential (e.g. creation of nature trails, restoration of a railway underpass). In 2009, more than 110 citizens projects have been collaboratively realised and managed by Kaufbeuren-Aktiv, totalling an amount of € 2.8 million. It thus can be considered as the offspring of a clear example of collaborative production of eServices.

5. Conclusions

New technologies can and have already changed the way public administrations work. The analysis of the European Public Sector Award 2009 data and practices, confirms that there is an increasing use of ICT within public administrations throughout Europe. Reforms and implementation of eGovernment solutions have been done at all different government departments and levels of administrations. The EPSA practices, though, have demonstrated that the most relevant and innovative reforms are applied at the lowest level, close to the citizens. In general terms, ICT has for long been an important tool for improving the performance of the public administrations, boosting economies and enhancing overall innovation. However, not everything is about ICT: governments need to secure alternative ways for users to communicate with the public service supplier.

The digital divide is still a real threat, risking leaving the most vulnerable social groups out of the

system. An over reliance on ICT may imply the risk of excluding social groups like the elderly or the economically vulnerable layers of population. Practices reviewed have shown that this issue can be tackled by providing users with diversified channels of access. The cases analysed have demonstrated a good mix between new (on-line) and traditional (off-line) systems.

However, there are also other threats connected to the use of ICT, such as citizens' privacy and integrity. It is highly important to pay attention to this in the context of a 'collaborative production' framework: questions regarding data integrity and IT security are to be seriously considered. Those who apply these technologies should remember there is a potential big risk of a backlash among citizens if these issues are not carefully approached.

In addition, public administrations all over Europe have developed institutional and policy frameworks to "open up", promoting trust and transparency in government, enhancing and facilitating access to information, creating spheres of public consultation and ultimately seeking to engage stakeholders in the design of services and the making of policy decisions. The empowerment of citizens through ICT is a clear trend in today's public administration reforms. This enhances the transparency and accountability of the governments.

The EPSA experiences have – here again – confirmed that not only front-offices but also back-offices have to be improved. Upgrading organisational processes by reducing administrative burden, simplifying administrative procedures, reallocating resources or enhancing efficiency and effectiveness, leads to the ultimate goal of achieving better public administrations. This has been one of the major trends identified within EPSA 2009. In fact, everything is now interconnected: an improved back-office will in return be reflected in a more efficient front-office. The latest developments in ICT have allowed a real dialogue between users and public bodies, resulting to interactivity between administrations and citizens and businesses becoming a reality through the Web 2.0 tools (i.e. tagging, multimedia sharing, social networking and book-marking, wikis, audio blogging & pod-casting).

Out of all the analysed eGovernment submissions a clear trend towards the usage of ICT and web 2.0 tools to enhance citizen involvement and empowerment is illustrated. However, it has to be pointed out that the most successful projects – in general – embraced a more holistic approach combining various methods and approaches. Regarding the level of involvement, it can be stressed that projects showed the best chances of long-term success where citizens were involved in the design and planning phase of the project or policy itself. Their participation at an early stage ensured that their needs were met in a way users considered adequate.

In addition, the involvement of the main users may mean very different things in different country specific environments. For instance, in elite based systems there is very little citizen communication and interaction. The degree of engaging them may therefore vary from the mere provision of information by the authorities to the provision of tools that enable e.g. citizens to participate in decision-making or design collaborative eGovernment processes.

Involvement of users is most likely to happen at a local level although there were a number of examples of larger scale projects. The role of national and/or European governmental organisations may, in the foreseeable future, be limited to promoting, encouraging and facilitating the adoption and/or provision of frameworks and guidelines as demonstrated by a number of cases, whereas involvement as well as – ultimately – the joint design of innovative services (on-line or off-line) needs a close relationship with those interested in taking them up and using them subsequently.

Summing up, when deploying eGovernment applications, it is always necessary to weigh the costs against the benefits of the (new) services. ICT and its integration (re-engineering, re-organisation of

front- and back-offices) are not goals in themselves. They are tools for improving the public sector service delivery. This not only applies to direct investment in reforms and new technologies, but also to the other topic in question, when the invested resources in involving the 'costumers' in the process of services production may not out-weigh the *subsequent benefits*. It is therefore imperative for EIPA and EPSA in the future to continue to identify the best, most innovative and efficient initiatives, making these available to a large community of public excellence.

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7. Annex 1 – Evaluation Criteria of EPSA 2009 (General and Specific per Theme)

7.1 EPSA 2009 General Evaluation Criteria

Criteria	Description
I. Innovation:	Novelty of the solution; degree to which the case shows a leap of creativity in public administration progress; something different that goes beyond what currently exists.
II. Public concern:	Degree of addressing a pressing need or important problem of public concern; the project topic is high on the agenda in European public organisations.
III. Significance/Relevance:	The project deals with a sufficient number of public sector bodies; a critical mass of actors is tackling the issue.
IV. Impact:	The realisation of planned objectives and activities; the provision and illustration of proven evidence and benefits; results demonstration.
V. Learning capacity and transferability:	With lessons of potential value to other entities; the project provides the potential for successful replication by other governments; it stimulates improvement in its application and provides mutual learning perspectives.

7.2 EPSA 2009 Theme Specific Evaluation Criteria

7.2.1 THEME 1 "Performance Improvement in Public Service Delivery"

Criteria	Description
I. Involvement of citizens in the processes:	• Not measurable in a quantifiable way; either citizens are involved or not.
II. Outcome orientation (real influence on society)**:**	• Focuses upon the actual change-related outcomes (e.g., salary, expenses, etc.), or on the change processes (e.g., procedures, voice and participation options, etc.) other than the policy related input / output.
III. Balance between **economy** and **quality:**	• There are three ways of changing the relationship between those two variables for the better: ◊ Constant quality / cheaper economy. ◊ Better quality / cheaper economy. ◊ Better quality / same economy.

7.2.2 THEME 2 "Citizen Involvement"

Criteria	Description
I. Involvement and satisfaction of citizens, civil society, administrators and politicians in the process/system:	• Described evidence on how governance is being brought out to the citizens. • Difficult to measure in a quantifiable way. • Description of the nature of the citizen communication process that has been developed. • Description on the target group of citizens that is involved.
II. Balance between process efficiency and governmental effectiveness:	• Focuses on the level of actual achieved process efficiency compared to the level of effectiveness accomplished throughout the project implementation.
III. Costs versus benefits of new approaches vis-à-vis traditional methods/ processes:	• Is an innovative or conservative approach applied in the project? • Description of genuine innovation and/or fundamental change.

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Opportunities and Forthcoming Challenges of Smartphone-based mGovernment Services

Facilitated by their increasing popularity, mobile technologies are frequently used by governments to improve communication and interaction with citizens. The use of mobile technologies for governmental or administrative processes has become commonly known under the terms Mobile Government or mGovernment. Smartphones provide various new opportunities to improve existing mGovernment services and to follow innovative approaches. For instance, integrated sensors such as GPS receivers and compasses facilitate the development of context sensitive mobile services. Also, additional communication technologies like NFC simplify communications and facilitate an efficient data exchange between mobile devices.

On the other hand, several challenges arise with the use of smartphones that threaten to compromise the success of mGovernment. The meeting of security requirements is probably the most severe issue of smartphone-based mGovernment. Permanent connection to the Internet and advanced software management capabilities make modern smartphones vulnerable to various kinds of malware-based attacks. The growing number of smartphone platforms and the achievement of user acceptance are further key challenges of smartphone-based mGovernment. The awareness of possible challenges and the development of suitable countermeasures to overcome identified issues are important steps towards a secure and successful smartphone-based mGovernment.

In this article we first discuss critical success factors of mGovernment and provide an overview of related work on this topic. By means of an assessment of various existing mGovernment initiatives, we then analyse the current situation of mGovernment and identify potential weaknesses and room for improvement. This analysis yields smartphones as great opportunity to tap the identified potentials and to remove existing weaknesses. Although smartphones offer a great potential, several challenges and risks must be taken into consideration. In order to overcome these issues, we propose an action plan that allows for secure and successful mGovernment services.

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" Smartphone-based mGovernment approaches face various new challenges that need to be overcome to address crucial success factors such as security and user acceptance. "

1. Introduction

The impressive emergence of information and communication technologies (ICT) during the past decades has led to various developments that simplify our daily life. Two relevant trends that can be observed in this context are the appearance of eGovernment services and the continuously increasing popularity of mobile communication technologies.

The term eGovernment basically refers to the use of ICT in governmental and administrative processes (Trimi and Sheng, 2008). provide an appropriate definition by stating that 'eGovernment refers to the use of wired Internet technology by public-sector organisations to better deliver their services and improve their efficiency'. Classical eGovernment services are typically based on well-known and approved Internet technologies. For instance, in Austria most of these services are accessible through web-based interfaces and may be used by means of common web browsers.[1]

With the growing popularity of mobile communication technologies such as WLAN, GSM, UMTS, or LTE, mobility has become an important aspect of our daily life. The various meanings and facets of the general term 'mobility' have been discussed by Roggenkamp (Roggenkamp, K., 2004). From a user's point of view, mobility basically means that information and services can be used everywhere and at any time, irrespective of the user's current context.

The potential of mobile technologies to improve eGovernment services has been recognised early. Attempts to make use of mobile technologies within eGovernment processes have become commonly known under the term Mobile Government or mGovernment. Kushchu and Kuscu (2003) define mGovernment as 'a strategy and its implementation involving the utilisation of all kinds of wireless and mobile technology, services, applications and devices for improving benefits to the parties involved in eGovernment including citizens, businesses and all government units'. In general, there is common consent that mGovernment is no successor or replacement of eGovernment. Instead, mGovernment is usually defined to be a subset of, or complement to, classical eGovernment solutions. mGovernment is often used as an umbrella term for services from different public sectors. According to the respective sector, mGovernment services can be classified in different categories such as mHealth, mAdministration, or mEducation. Hence, the term mGovernment actually covers a broad range of mobile applications and service offered by different public authorities.

Mobile technologies are also employed by numerous services from the private sector. For instance, various banking institutions offer their customers SMS-based services for the authorisation of financial transactions. Strictly speaking, these services do not belong to the mGovernment domain as they originate from the private sector. However, many of these services are closely related to mGovernment services as they have similar security requirements.

mGovernment services have various advantages compared to classical eGovernment solutions. For instance, the always-on characteristic of mobile devices such as mobile phones allows for continuous access. This applies to both services that may be accessed 24/7 and also to citizens, who remain accessible any time and can be supplied with important information immediately.[2] The ease of use of mobile communication technologies and their broad acceptance in nearly all social classes are further key benefits of mGovernment. Finally, the fact that mobile phones are usually very personal devices that are often not even shared between family members is also advantageous as it allows for enhanced personalisation mechanisms.

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[1] A comprehensive list of Austrian eGovernment services is available under the URL http://www.buergerkarte.at/anwendungen.en.php

[2] For instance, this allows for efficient alert systems that inform citizens in case of imminent dangers such as natural disasters or terrorist attacks.

The various benefits of mobile technologies have already paved the way for numerous mobile services throughout the world. Mobile solutions can actually be found in different fields of application. The broad spectrum of already existing services from the public and the private sector as well as continuous improvements of mobile technologies emphasise the present and future relevance and importance of mGovernment. Especially the emergence of smartphones has the potential to give new impulses to mGovernment services.

Although mGovernment services are advantageous in many aspects compared to classical eGovernment approaches, the success of mGovernment solutions is no safe bet but depends on several success factors. User acceptance and security are commonly known to be crucial success factors for mGovernment. To achieve user acceptance, mGovernment services need to provide users an apparent personal benefit.

In the context of mGovernment, smartphones offer a great opportunity to provide users personal benefits and to improve user acceptance. Their enhanced processing and communication capabilities as well as various additional features such as GPS or the upcoming integration of NFC technology make these devices perfectly suitable for new powerful mGovernment services. Smartphones offer users various benefits as they combine mobile phones' always-carried and always-on characteristic with the processing power of desktop computers.

Unfortunately, the usage of smartphones does not only offer new opportunities but also bears new risks and challenges. Due to their improved functionality and flexibility, smartphones are much more vulnerable to attacks compared to traditional mobile phones. The assurance of security is thus probably by far the most important but not the only challenge that arises in smartphone-based mGovernment services. In this article we identify opportunities and forthcoming challenges that show up when using smartphones in mGovernment. We also propose an action plan to overcome the identified issues and to allow for secure and successful mGovernment solutions.

The remainder of this article is structured as follows. Section 2 provides an overview of related work and shows that user acceptance and security have been identified as crucial success factors for mGovernment. In Section 3, we present results of an assessment on current mGovernment initiatives and projects and show if and how the identified success factors are considered in practical implementations. Section 4 introduces smartphone technologies in more detail and emphasises smartphones' capabilities to improve the user acceptance of mGovernment services. In Section 5, we identify several challenges that may arise as a consequence of using smartphones in mGovernment. We then propose an action plan to overcome the identified challenges. Finally, conclusions are drawn in Section 6.

2. Related Work

mGovernment – the use of mobile technologies within eGovernment processes – has been the topic of various scientific and non-scientific publications. Considering the broad spectrum of scientific work on mGovernment, three central topics can be identified.

The first topic covers aspects of personalisation and presentation issues on mobile devices. Publications on these issues have for instance been contributed by Hassan et al. (Hassan, M. & Jaber, T. & Hamdan, Z., 2009), Germanakos et al. (Germanakos, P. et al., 2006), and Al-khamayseh et al. (Al-khamayseh, S. et al., 2006).

The second topic of scientific publications covers the presentation of case studies and practical

experiences that have been gained during the productive operation of mGovernment services in different regions and countries. For instance, various aspects of mGovernment in Macedonia have been analysed by Antovski and Gusev (2005 and 2006). Another case study has been presented by Carcillo et al. (2006), who report on an mGovernment initiative in Torino, Italy. mGovernment is also a topic of interest in the Middle East. For instance, current mGovernment solutions of Dubai have been highlighted by Alrazooqi and De Silva (2010). Naqvi and Al-Shihi (2009) have presented current mGovernment initiatives in Oman.

Finally, the third – and in the context of this article probably most relevant – topic of scientific publications deals with the identification of barriers and success factors of mGovernment. This is actually an important issue, as development, deployment, and productive operation of mGovernment services are usually subject to financial investments, which may be lost if offered services later turn out to be unsuccessful. In general, success of eGovernment and mGovernment services is given, if they work as expected and if they achieve estimated user rates.

Al-khamayseh, Lawrence and Zmijewska (2006) et al. identify fourteen success factors for mGovernment services. Amongst others, the authors mention quality, privacy and security, user needs, and acceptance as crucial factors for successful mGovernment services. Similar conclusions are drawn by Karan and Khoo (2008), who identify infrastructural investment, regulatory and political environment, awareness and acceptance, security and privacy, and equitable acceptance as key requirements for successful mGovernment. Relevant success factors have also been discussed by El-Kiki and Lawrence (2006) and El-Kiki (2007). Amongst others, they have identified the success factors of availability, convenience, privacy and security, usability, and transparency.

Considering the fact that user acceptance has been identified as crucial success factor by most authors, Carroll (2005) identifies several acceptance factors that should be taken into account during design and implementation of mGovernment services. In addition, Carroll (2006) again emphasises the importance of user acceptance for mGovernment services by stating that 'the government can mandate the provision of these services but they cannot mandate their acceptance'.

Considering related work on mGovernment, user acceptance as well as security and privacy can be identified as key success factors of mGovernment. In the next section we assess several mGovernment initiatives and evaluate if and how current services consider the identified success factors.

3. Assessment of Current mGovernment Projects and Initiatives

The potential of mobile technologies to improve eGovernment services has been recognised early. In numerous countries all over the world, various mGovernment services have already been deployed. We have assessed a subset of these services in order to identify current trends in mGovernment. In this section we present results of this evaluation process and show how the previously identified success factors, user acceptance and security, are considered by current mGovernment services.

3.1 Methodology

The assessment of current mGovernment projects and initiatives has been based on an extensive literature research. Information has been collected using both general purpose web search engines and special search engines for scientific literature such as Publish or Perish (Harzing, 2011). In order to obtain a comprehensive overview, the used search engines have also been queried with various keywords that are closely related to mGovernment. For instance, besides obvious keywords such as

"mGovernment" or "mobile government" also related terms like "mobile signature" or "mobile ID" have been used to query the employed search engines. Based on the retrieved data, information on mGovernment projects from all over the world has finally been extracted from both scientific publications and non-scientific industry driven white papers such as Mobi Solutions Ltd (2010). In total, more than 80 different mGovernment projects and mobile solutions from related private-sector domains have been evaluated.

Considering the fact that for many mGovernment solutions only less information is publicly available, we have restricted the evaluation process to a few basic aspects only. In particular, we have focused on the identification of common fields of application for mGovernment services. Furthermore, we have had a more detailed look on technical implementations in order to find out, on which mobile technologies current mGovernment services are usually based on. Subsequent sections of this article will make clear that these aspects are indeed relevant to motivate the use of smartphones in mGovernment services.

3.2 Results of the Evaluation Process

mGovernment solutions can actually be found in both developed and developing regions all over the world. Due to different prerequisites, mGovernment solutions from developing countries usually differ in various aspects from those of developed countries. In many developing countries in Africa or Asia, mobile communication networks and mGovernment services are often the only opportunity for governments to reach their citizens. Contrary, in developed regions such as the EU or the USA, mGovernment services are often just a nice to have feature. Because of significant differences in the given prerequisites, a differentiation between mGovernment solutions from developing and developed regions is required for a meaningful analysis.

Regarding the identification of common fields of application, lack or insufficiency of fixed-line communication infrastructures in developing countries is an important factor. Especially in the health sector, efficient and reliable communication infrastructures are often a crucial requirement. Mobile technologies and mGovernment solutions provide appropriate means to overcome existing shortcomings in fixed-line communication infrastructures. It is thus obvious that in developing countries mGovernment solutions are frequently used in the course of mHealth projects to improve public health services.[3]

Besides the health sector, the lack of reliable communication infrastructures has negative effects on other domains such as the agricultural or the financial sector. Also in these domains, mGovernment services can help to improve the situation. In various developing countries, mBanking[4] and mAgriculture[5] services are currently in place and help to overcome deficits in fixed-line communication infrastructures.

In developed countries, the situation is fundamentally different. As reliable communication infrastructures are available most of the time, mGovernment services are mainly used for convenience and efficiency reasons. Thus, in developed countries, a broad spectrum of mGovernment services from various domains is currently available. These services include mobile e-ID and eSignature

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3   Examples for m-Health projects in developing countries are the Bloodbank-SMS project or the Phones for Health program (Voice of America, 2007), which have both been set up in Africa. mHealth services are also used to provide citizens with relevant information about diseases such as HIV or AIDS. Kenya's Games4Life (Services 2020, 2010) project or South Africa's HIV Infoline are representative examples for this kind of service.
4   For instance, the mPesa project (Safaricom, 2011) provides citizens with low incomes a mobile phone based non-cash money transfer system.
5   In India, mobile technologies are used by fishermen to stay informed about current market situations.

services,[6] mobile ticket systems for public transportation infrastructures,[7] mobile payment systems,[8] or SMS-based notification services.[9] Most of these services have in common that they aim to improve efficiency and try to satisfy the needs of the typical western always-on society.

Surprisingly, the differences between developing regions and developed countries do not influence the choice of mobile technologies, on which mGovernment services are based on. Our evaluation of current mGovernment initiatives has shown that most projects in both developing and developed countries actually rely on SMS-based technologies. Reliance on SMS-based technologies seems reasonable for developing countries. In these regions, 3G mobile networks and high-end mobile phones are not yet available in many cases. On the contrary, in most developed countries nationwide UMTS network coverage and powerful smartphones are already state of the art. It is thus, quite astonishing that these enhanced communication and mobile processing capabilities are not used by most mGovernment services.

3.3 Consideration of Success Factors

User acceptance and security have been identified as crucial success factors for mGovernment services. Assessment of current mGovernment services has turned out that these requirements are often only partially fulfilled by existing services.

Considering the success factor security, evaluation of current mGovernment projects has shown that security is often no topic of great concern. This is due to the fact that many evaluated services are rather simple and do not have high security requirements. Also, most evaluated services are based on SMS technology. Although several vulnerabilities of the GSM standard are known (Heise, 2010), the exchange of SMS messages is implicitly assumed to be secure in most cases. Later in this article, we will see that this presumption has to be reconsidered for smartphone-based services.

Regarding user acceptance, again a distinction between developing and developed countries is required. Evaluation of mGovernment services from developing countries has shown that these services are often used to bridge gaps that are due to missing fixed-line communication infrastructures. mGovernment is thus the only way to gain access to certain services. Due to missing alternatives, the requirement for user acceptance can be easily met in these cases.

For developed countries, the situation is usually more complex. Due to well-developed infrastructures, people are usually provided with various opportunities and communication channels to access services. For instance, consider a bank that offers customers three alternatives to carry out financial transactions. As a first option, customers may personally show up at the bank during office hours. Alternatively, the bank's eBanking portal can be used to carry out the transaction process remotely over the Internet. Finally, the bank provides their customers also a mobile service that allows a processing of financial transactions using mobile phones. In this scenario, acceptance of the offered mobile service is not guaranteed. Experience shows that customers will tend to use that opportunity, which yields the most personal benefits. For the success of mGovernment services it is therefore crucial that mobile services offer clear benefits that outweigh potential drawbacks of mobile technologies such as small screen sizes or limited input capabilities.

In the next section we will show how smartphones can be used to enrich mGovernment services and

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6   For instance, in Austria citizens may carry out electronic signatures using their mobile phones (A-SIT, 2011).
7   A mobile ticket system is for instance used in Malaga, Spain (Mobile Marketing Association, 2011).
8   In several countries such as Austria, Estonia, and Sweden, parking fees can be paid with mobile phones.
9   SMS-based notification systems exist in various countries all over the world. These services are used for conveniences reasons (e.g. reminder services) and also in serious scenarios (e.g. natural disaster alert services).

to generate various benefits that may lead to an improved user acceptance and hence to greater success.

4. The Smartphone Opportunity

For many years, mobile telecommunication networks have been based on 2G technologies such as GSM, GPRS, and EDGE. While in most developed countries these technologies have already been supplemented by more powerful 3G technologies, GSM is still state of the art in various developing regions. Considering the evolution of mobile communication technologies, it is comprehensible that most mGovernment services have relied on GSM and especially on SMS technology so far.

The restriction to SMS technology allows for the development of rather simple mGovernment services only. For these services, achieving user acceptance has turned out to be a challenging task. The introduction of 3G communication technologies and the recent emergence of smartphones offer opportunities to overcome this challenge. In this section we show how smartphones and advanced mobile communication technologies can contribute to the acceptance and the success of mGovernment.

Smartphones have been around for roughly ten years and have primarily been used in business areas. Especially, Research In Motion (RIM) was very successful with their BlackBerry phones and the employed push technology that allows for instant mobile email access. Microsoft employed the Windows mobile system for PDAs and then smartphones. While these early smartphones have been successful in certain areas, they did not have a significant overall market share compared to standard mobile phones.

However, these figures are currently changing due to recent developments that were mainly initiated by Apple and Google in 2007 and 2008 and followed by other companies like Microsoft and RIM. The success of the newly introduced devices and operating systems had a major influence on the market and even caused established smartphone producers to change their strategies.

Why have the most recent platforms been so successful? When looking at a current handset, several factors and combination of these factors seem to be responsible for this success. These factors include enhanced processing power of CPUs and GPUs, the integration of a broad range of sensors and cameras, highly sophisticated operating systems, the introduction of application stores, permanent Internet access, and significantly improved multi-touch user interfaces. Although the new user interfaces play a crucial role, each of the other factors and especially their combination are the main reason for the overall success of recent smartphone platforms.

The combination of these technologies enables a broad range of applications that cover every aspect of daily life ranging from casual gaming over location-aware applications to powerful business related appliances. Also in the context of mGovernment, smartphones show great potential to allow for powerful innovative services. For instance, the improved user interface facilitates an improvement of the usability of mGovernment services and applications. The various sensors, which smartphones are usually equipped with, allow for context aware services. Such applications could for instance take into account the user's current position and offer location-based services. Smartphone-based mGovernment services could also benefit from smartphones' various communication capabilities. For instance, innovative ad-hoc approaches could be followed that are based on Bluetooth or NFC technologies.

The targeted use of smartphones and related technologies facilitates the development of powerful

and efficient mGovernment applications. As more powerful applications show a higher potential to satisfy given user needs, smartphones are a great opportunity to improve user acceptance. In the following section we discuss several issues that may arise in smartphone-based mGovernment services. We also introduce an action plan to overcome these challenges and to make smartphone-based mGovernment a success.

5. Action Plan to Overcome Forthcoming Challenges

Smartphones show great potential to improve user acceptance and to contribute to the overall success of mGovernment. Unfortunately, smartphone-based mGovernment services bear several new challenges that have to be overcome. These issues are related to the development of efficient and feature-rich smartphone-based mGovernment services, the handling of different smartphone platforms, and the fulfillment of security and privacy requirements.

5.1 Development of Accepted Smartphone-based mGovernment Solutions

Although smartphones have a great potential to improve mGovernment services, the success of smartphone-based mGovernment is no safe bet. Several aspects have to be taken into account during design and development of these services in order to tap the full potential of smartphone technologies.

According to Carroll (2005), access to certain technologies does not automatically imply that these technologies are actually frequently used. This can be observed for various services and applications, also from the eGovernment domain. Many of them have been developed just because the technical prerequisites had been available. However, many of these applications do not take into account user needs and requirements and thus suffer from low acceptance rates.

Furthermore, studies have shown that users are often unwilling to invest much effort in learning how to solve complex tasks with mobile phones (Carroll, J., 2005). If mobile services are too complex and difficult to use and understand, users will refuse them and fall back on familiar and approved approaches.

From these experiences the following recommendations for the development of successful smartphone-based mGovernment services can be derived.

- During design and development of mGovernment processes, the main focus should be put on users and their needs and requirements. The new features and improved user interfaces of smartphones should be evaluated and extensively employed wherever they satisfy the user's needs.

- Even though smartphones offer a broad spectrum of additional features, mGovernment services have to remain intuitively and easy to use. Hence, for the sake of usability, services should limit themselves to core features and abandon unnecessary gimmicks that complicate interaction with the service.

5.2 Handling of Different Smartphone Platforms

Current SMS-based mGovernment services can be accessed and used by arbitrary mobile phones. This is mainly due to the fact that the sending and retrieving of SMS messages are core functionalities that are supported even by simple and rudimentary end devices. For more sophisticated smartphone-

based mGovernment services, the situation is typically more complicated.

Due to the current popularity of smartphones and the highly competitive market situation, vendors have been introducing new devices frequently during the past few years. Nowadays, a wide range of smartphones from different vendors and with different equipment is in use. The diversity of end devices actually bears a potential risk for mGovernment services. If these services rely on certain innovative features, they might not be accessible to users with older or less powerful devices.

Another challenge that arises with the use of smartphones is the plurality of currently deployed smartphone platforms and operating systems. Although, there is the standard HTML5, which is largely supported by the browsers of the different smartphone platforms, most of the applications still need to be implemented natively. The reasons are mainly related to performance issues when using HTML5 applications on mobile web browsers and the native-only availability of certain APIs, which provide hardware acceleration for displaying 2D and 3D graphics, access to certain sensors, smartphone storage, or other specific features. Thus, it is currently not feasible to only base the development of applications on standards like HTML5. Given these challenges, we propose the following course of action for the development of successful mGovernment services.

- Crucial services such as mobile alert systems should rely on innovative technologies only if this is really required. Reliance of established and wide spread technologies increases the number of users that are actually able to use the service.

- For less critical services, innovative and potentially platform specific technologies should be used more frequently so that users can slowly get used to these technologies. This way, their acceptance is increased and a later application of these technologies in more critical services is facilitated.

- Mobile applications and smartphone-based services should be designed and implemented such that they can be easily ported to different platforms. This saves developing costs and ensures that services can be used on various platforms. Wherever possible, standards like HTML5 should be used in order to achieve platform independence.

5.3 Guarantee Security and Privacy

Although recent developments in the smartphone sector provide a broad range of new opportunities for mGovernment applications, we need to keep one main issue in mind – *security*.

In order to identify the security functions that play a role for mGovernment use-cases, we need to understand the threats against smartphones first. Although mobile devices such as laptops or PDAs have been extensively used for more than ten years, the nature of current smartphones requires a re-evaluation of existing threats. Our own security and threat analyses of current smartphone platforms (A-SIT, 2010) and other recent literature (ENISA, 2010) suggest that new threats are basically due to three reasons.

Smartphones include and combine a broad spectrum of innovative technologies. In order to make use of these technologies, highly sophisticated operating systems that resemble their desktop counterparts are required. These operating systems are susceptible to well-known attacks coming from all kinds of malware known from the PC domain. Furthermore, the integrated technologies and even the standard telephone functionality (phone, messaging) cause further threats that have not been possible on desktop computers. Examples are attacks on smartphones with text messages, the usage of malware to spy on conversations, or the tracking of users with information from position sensors.

Smartphones are ultra-mobile PCs. They can easily be used within all aspects of daily-life ranging from sports over gaming to nautical navigation. This mobility causes new threats since smartphones are exposed to completely new areas.

On smartphones, business and private use cases intermingle. This is mainly due to smartphones' mobility and enhanced multimedia capabilities such as gaming or social networks. For instance, a smartphone with business critical data can also be used during private socialising events. Due to these mixed use cases, a large number of threats ranging from simple theft to the injection of malware in third party applications emerge.

In order to cope with these three basic threats, a broad range of security functions is already integrated into current smartphone platforms. For different smartphone platforms, a huge diversity in supported security functions can be observed. This diversity is caused by both the different targeted user groups and by the combination of new and established technologies. The combination of different technologies on smartphones raises several new security issues that need to be addressed by adapting established security functions and inventing new mechanisms. The inhomogeneity of available security functions becomes apparent when looking at some of the most popular smartphone platforms.

Similar to business applications, mGovernment applications involve the handling of sensitive data, which requires a wide range of security functions. These include the protection of data on a device via encryption, a secure way of locking the device (e.g. passwords), anti-theft protection (e.g. remote wipe) and many more.

However, when looking at the protection of sensitive data within business applications, there is another important aspect that covers the management and deployment of available security functions. Since the parameters for business related smartphone applications and therefore the required protection mechanisms vary depending on the use-case, a policy framework capable of configuring and enforcing every protection aspect is vital. Especially the enforcement of certain security policies (e.g. password length, encryption, etc.) plays an important role in securing the application relevant data.

For mGovernment applications and the handling of sensitive private data, the same security functions as in business applications play a role. However, there is an important difference: even if a detailed policy framework is available for a smartphone platform, it cannot be employed for mGovernment applications. In contrast to a company that issues smartphones to its employees, a government that provides mGovernment applications has neither a mandate nor the technical means to define and enforce the policies on citizens' smartphones. Thus, if an mGovernment application handles sensitive data that would require encryption and strong password protection there is only the user that may or may not configure the appropriate security functions.

Considering the fact that security has been identified as key success factor for mGovernment, the above mentioned issues regarding smartphone security pose a serious challenge. Therefore, for the development of smartphone-based mGovernment services we propose the following course of action.

- mGovernment applications or services running on smartphones should not assume to be executed in a secure environment. If possible, the environment's security should be evaluated by assessing the presence of security features.

- mGovernment applications and services should make use of security features provided by the particular mobile platform.

- If security features provided by mobile platforms are insufficient, mGovernment applications and services should implement supplementary security mechanisms.

- The roll-out of smartphone-based mGovernment services and applications should be complemented by appropriate information campaigns to raise users' awareness of possible threats and countermeasures.

6. Conclusions

In recent years, the increasing popularity of mobile communication technologies has been pushing the development of numerous mGovernment services all over the world. Despite the various advantages of mobile services, their success depends on two key success factors – user acceptance, and privacy and security related issues.

The practical relevance of these success factors has been analysed by conducting an extensive survey on more than 80 mGovernment initiatives from all over the world. The results indicate that mGovernment services are used in a wide range of applications such as mHealth, mEducation, or mAdministration. Regarding user acceptance, there is a significant difference between developed and developing countries. While in the latter case mobile communication technologies are often the only alternative, developed countries typically offer different communication channels in parallel. Therefore, the acceptance of mGovernment applications strongly depends on the additional benefits when compared to their web-based counterparts.

Another interesting result is that still most of the services are based on rather simple mobile technologies such as text messaging. In order to overcome the limitations of this aging technology, the focus needs to be turned to the recent emergence of smartphones, which provide increased processing power, enhanced communication capabilities, location awareness, and a wide range of additional features. However, the employment of smartphones also bears several major challenges. In particular, the handling of different smartphone platforms and the meeting of security and privacy requirements have been identified as key challenges.

Overcoming the identified open issues is mandatory to facilitate the success of smartphone-based mGovernment services. The action plan provided in this paper assists in meeting these challenges and helps to pave the way for future secure and usable smartphone-based mGovernment services.

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Mobile Governance: The Kerala Experience and Insights for a Comprehensive Strategy

The mGovernance project in Kerala is a comprehensive Mobile Governance project covering more than sixty Government Departments. The objective of the project is to integrate the latest advancements in mobile technology in the organisational schemes of various Government departments with an aim to create cost effective, efficient and round the clock Government information systems. A comprehensive and integrated Service Delivery Platform has been created to roll out the aforementioned services. The platform has multiple delivery-channels (SMS, Voice, Data, USSD) and is integrated in the networks of all major Indian operators. The Service Delivery Platform is entirely based on Open Source Technologies and is represented by the short-code '537252', corresponding to 'KERALA' in the non-QWERTY mobile keypad.

The connection and effective collaboration in the context of mGovernance, requires the convergence of various technology components (i.e. voice, data and media) but also that of telecommunications' operators. This paper tries to analyse the term 'convergence' in the context of mGovernance and examines the approach adopted to identify services and design solutions, primarily focusing on the leverage of the existing networks and available wireless technologies. The paper also tries to capture the various challenges faced while trying to implement mGovernance, as well as the solutions devised to address some of those challenges, through the presentation of the relevant case studies. Service Delivery models for mGovernance Services are also discussed and the usage-pattern of a number of mGovernance services is analysed on the basis of the relevant facts and figures.

Last but not least, the paper discusses the strategy that might be adopted for mGovernance in India, based on the Kerala experience as well as on discussions with other National Government Departments. Innovative models to leverage scarce resources, like the 'cloud computing' model, are also presented, while a brief description of equally innovative models of collaboration, ensuring PPP (Public-Private Participation) and the coordination of telecommunications operators concludes the paper.

Sabarish Karunakaran

Kerala State IT Mission

> 66 Mobile governance is an amazing technology as it offers government services on-the-go to its citizens, extending the service availability beyond office premises and regular office hours to 'anywhere-anytime' mode, bridging the "digital divide". 99

1. Introduction

The state of Kerala has always been in the forefront regarding the utilisation of Information and Communication Technologies (ICT) for governance and for reaching out to its citizens. The comprehensive Mobile-Governance project named 'mGovernance Kerala', initiated by the State Government, has been a major milestone in the context of these efforts. mGovernance is defined as the strategy and relevant implementation involving the utilisation of all kinds of wireless and mobile technology services, applications and devices for improving services for citizens, business and all Government units. While eGovernance is all about making conventional Government services available through Internet-portals, mGovernance goes a step further and makes these services available through mobile-phones and other wireless devices allowing the project to propel advanced, higher level governmental functions.

2. Why mGovernance

The rapid penetration of mobile ICT gadgets such as mobile phones, Personal Digital Assistants, instant messaging software and other wireless devices, has increased the mobility of interaction, making mobility the new lifestyle paradigm. This paradigm is marked by mobile-technologies and 'always-on' citizens and Governments, who create a burgeoning public interest in mobility by embracing mGovernance. It is well known that mobile phone has become in recent years the most ubiquitous communication device, with higher penetration rates than the Internet. Therefore, it provides greater opportunities for social impact than any other ICT, while being more affordable and, also, less demanding in the skills and training required (Kinkade et al., 2008). Transparency, accountability and accessibility are the key mantras of a successful government, when escalating mobile penetration has made the mobile phone a growth driver and an effective tool for good governance, not only in facilitating openness, transparency and efficiency of the government, but also in creating a flow of information between departments, institutions and various government levels.

The total impact of mobile telephony is primarily driven by its level of penetration in a given nation – that is the number of wireless subscribers as a percentage of the total population. A report on the socio-economic impact of mobile technology, by a team of expert researchers led by Professor Rajat Kathuria of the Indian Council for Research on International Economic Relations (ICRIER), has found clear evidence suggesting that mobile penetration promotes economic growth. The report showed that Indian states with an increase of 10% in mobile phone penetration would enjoy a 1.2% higher annual average growth rate than those with a lower teledensity (Rajat Kathuria, 2009). The state of Kerala is a fertile ground for the comprehensive testing of the concepts of mobile governance, as it has a much higher tele-density (poised to touch 100 % by September 2011), compared to the national Indian average of 70%.

3. Project mGovernance and Convergence

The project 'mGovernance in Kerala' is a comprehensive project covering more than 60 Government Departments and aiming to integrate the advancements in mobile technology as everyday practices in various Government departments create cost effective, efficient and round the clock Government information systems.

The convergence of various technology components (voice, data and media) and that of telecommunications operators is imperative for the mGovernance project to be fruitful. This has been executed through the mGovernance 'Service Delivery Platform', a platform with multiple delivery-channels (SMS, Voice Data, USSD), also integrated within the networks of all major operators. The SDP has been designed to smoothly handle the scale-up of mGovernance, while the relevant applications, primarily voice and SMS driven in the initial phase, are compatible with all types of handsets.

Figure 1: Service Delivery Platform
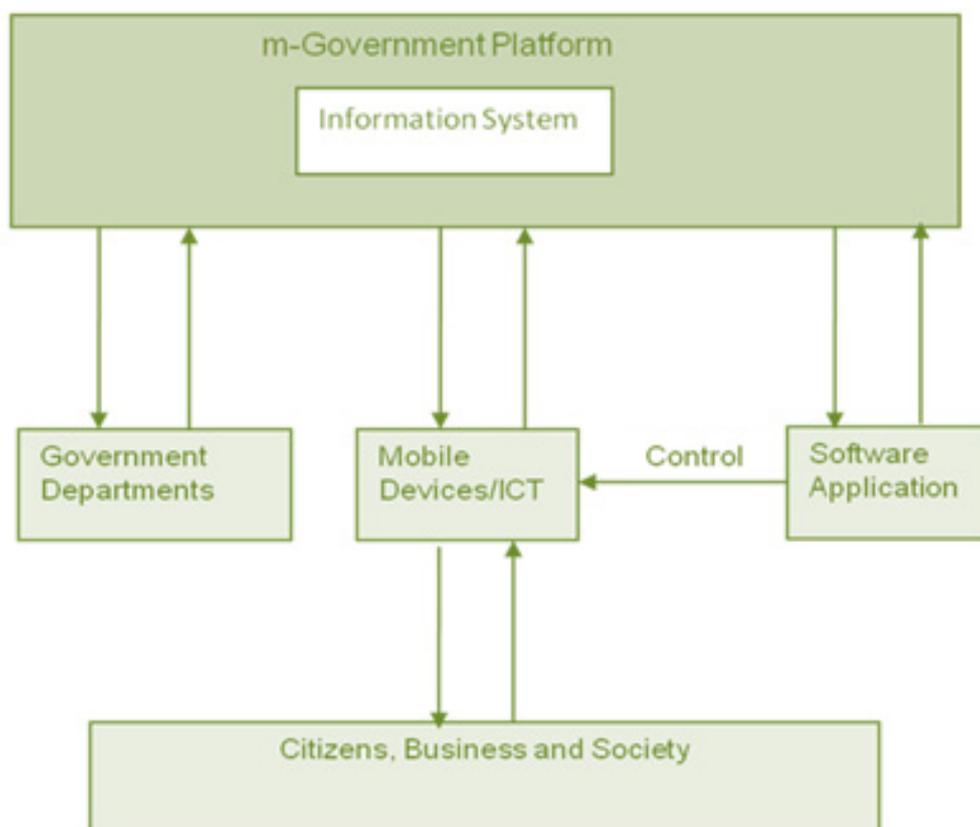
In order to utilise the ICT infrastructure already developed as part of different departmental backend computerisation and to seamlessly convert the existing legacy of web based services and applications, without the hassle and complexities of system upgrades or complex programming, a shared Government infrastructure viz., The mGovernance Service Delivery Platform (MSDP) was established. The same has been hosted at the State Data Centre – the data centre housing all the servers of eGovernment applications, which are securely hosted and managed by the government.

The mGovernance Service Delivery Platform (MSDP) is the single touch point offering a number of mServices to more than 60 State Government Departments. The Platform acts like a Middleware, connecting citizens with various Government Departments and departmental services and offering high scalability and redundancy through its modular architecture.

The MSDP has 12 servers, including database-servers, servers for SMS, MMS, Voice and USSD. The servers are hosted in the State Data Centre (SDC) as well as Operator Data Centres. The MSDP also consists of dedicated E1 lines, telephony-cards and broadband Internet connection. In addition to the above-mentioned servers, the MSDP has been integrated with the following:

Short-code 537252: The Service Delivery Platform is represented by the short-code '537252' which corresponds to 'KERALA' in the non-QWERTY mobile keypad, a code open to all the operators in Kerala ensuring that there exist no more "walled gardens" and ensures a paradigm similar to that of net neutrality in the mobile telecom space as well. This ensures equitable access with mServices made accessible to subscribers of all the mobile-networks in Kerala. The departments and services requested through an SMS sent to 537252, are intelligently recognised by analysing the keywords in the input string. mServices being provided through short-code allow the user to pay for the services received. Otherwise, the government would pay the cost associated with SMS reply pushed to the service seeker, for providing replies to queries in response to service requests of users. Moreover, the government has stipulated a series of agreements with the operators according to which, each operator shares 10-15 % of the revenue generated through the short code, ultimately ensuring a robust business model and financial sustainability of the project.

eSMS: The eSMS is an exclusive SMS Gateway established by the Kerala State IT Mission for various Government departments. It is being used by the department officials for intra and inter-departmental communications and has proved very effective for sending notifications/alerts etc. The officials who have access to the gateway can login onto the web interface and send messages to a list of numbers in a single mouse-button click. Unlike the Internet based email systems, the messages are delivered instantaneously via eSMS, also making available to the User the relevant delivery reports. Along with Bulk-SMS pushing capability, the SMS server also supports regional languages and Flash SMS.

Interactive Voice Response Systems and Out Bound Diallers: A dedicated and configurable IVR-system has been made available in the Service-Delivery Platform with the aim to increase the efficiency of government call-centres. Citizens who call the toll-free number of a particular Department will be guided by the IVR-system, even in the absence of call centre-agents, thus ensuring round the clock services. A dedicated automated Out Bound Dialling (OBD) facility has also been deployed, making 60 simultaneous calls possible (the OBD can also be IVR-driven).

Other than the items mentioned above, stand alone blue tooth kiosks, which offers one more touch point for the delivery of public services has also been established, where in government related information brochures, information charts, travel-guides, maps etc can be downloaded on to a mobile device and viewed or read offline. Bluetooth-enabled information-kiosks play an important role in mGovernance by acting as a bridge between the Internet and mobile world, enabling dissemination of reliable information. A Bluetooth-Kiosk has been installed by the Tourism Department in the Cochin International Airport.

4. The Approach

The approach adopted to identify services for mGovernance in Kerala was based on consulting. Project managers initially established a contact with the heads of various departments and discussed the possible applications of mobile and wireless technologies. After short-listing the potential areas of publication, field-studies were conducted for a thorough analysis. A detailed Functional Requirement Specification (FRS) was prepared during the next stage for the proposed solution with the project implementation commencing after the FRS had been approved by the project stakeholders (Government Departments).

The consulting model has proved ideal for mGovernance, as it is hard to conceive 'one-size-fits-all' solutions. More often than not, the requirements are unique even though they may not represent huge technology challenges. The major challenge faced during the implementation of this model was to build solutions that were:

- Accessible to the general public irrespective of their socio-cultural and educational background.

- Scalable to such an extent that the entire population benefits from them.

- Acceptable by and deployable across all the Telecom Operators (Kerala currently has the presence of more than 10 operators.)

- Replicable and Deployable with minimal changes, for similar requirements.

The solutions developed for the general public depended on Voice Applications, the ones designed for the literates depended more on signalling (texting), while the solutions developed for surveillance depended on imaging technology and Data Service based applications.

4. Case Studies

5.1 Mobile-Originated (MO) SMS services

The usage statistics of **Mobile-Originated (MO) SMS services** organised on the basis of 'Keywords' are presented in the graphs below. All MO SMSs were sent to the number 537252 and each successful SMS is referred to as a 'hit'. The keywords have been designated according to the requirement of respective departments.

Graph 1: Keywords with hit-count in 6 and 7 digits
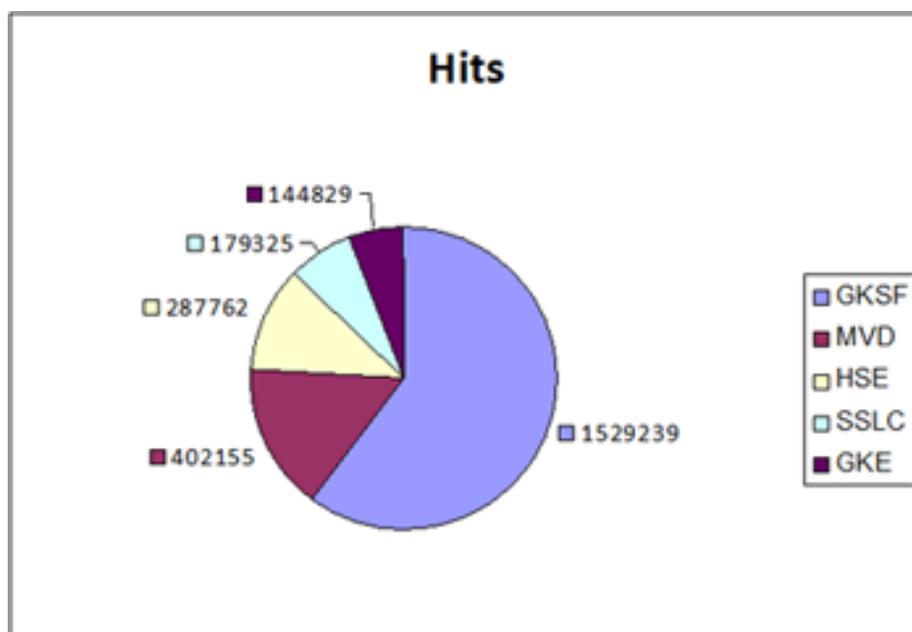
Graph 2: Keywords with hit count in 5 digits
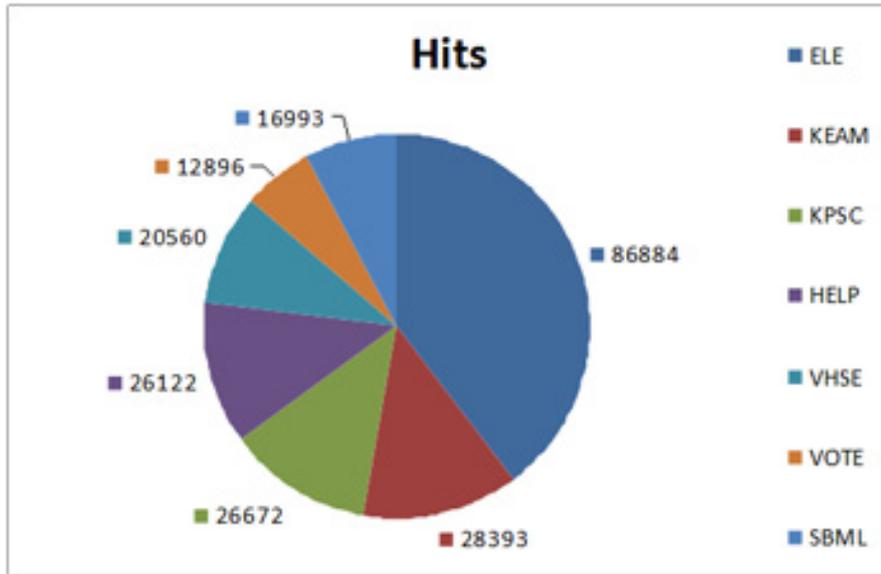

Graph 3: Keywords with hit-count in 4 digits
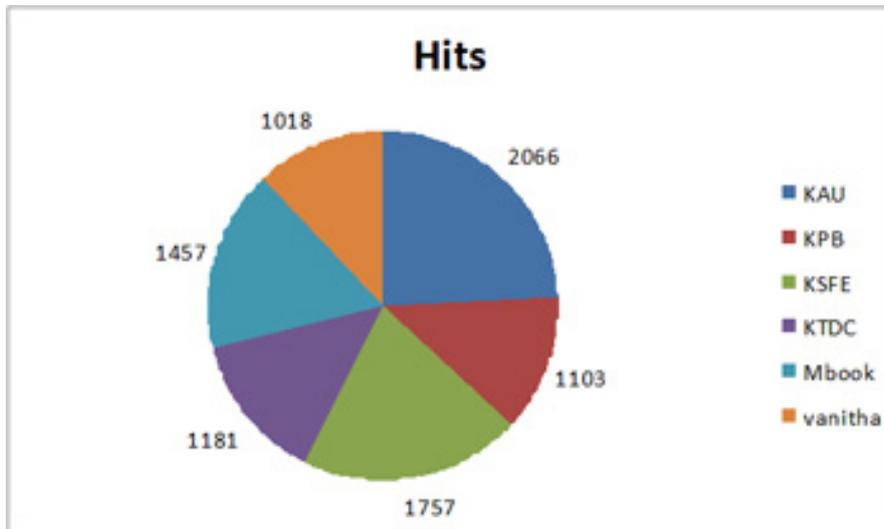
Graph 4: Keywords with hit-count in 3 digits
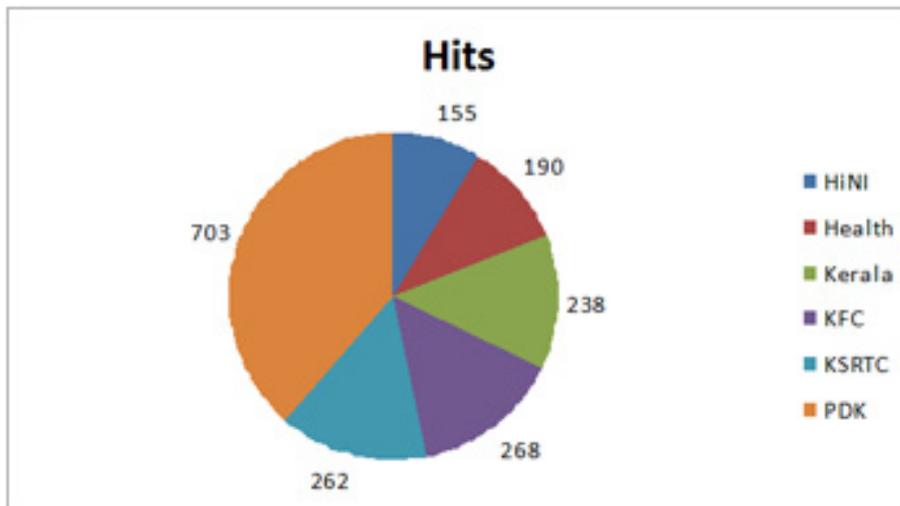
5.2 Mobile-Terminated (MT) SMS service

The Mobile-Terminated (MT) SMS service is better known as 'eSMS'. The usage-statistics of MT SMS services from January 2010 to April 2011, organised on the basis of the Departments that received the SMSs, have been captured in the graphs below (department name on X-axis and the count of SMS allotted on Y-axis).

Graph 5: SMSs allotted to first 12 e-SMS Accounts
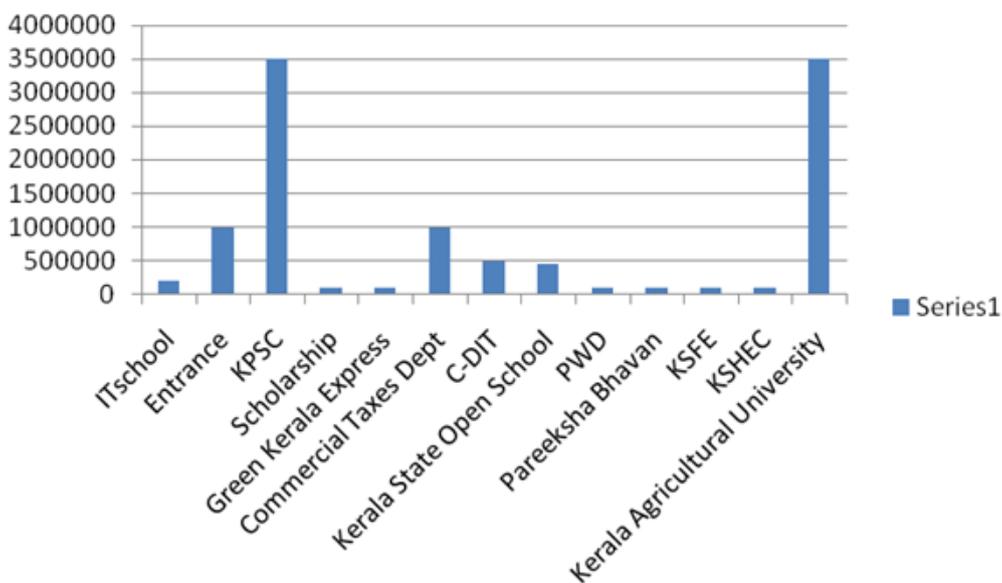
Some of the sample SMS based applications deployed are as follows:

Green Kerala Express – SMS/M-voting

The Ministry of Local Self Government, GoK and *"Suchitwa Mission"* initiated the Social Reality Show – 'Green Kerala Express' – where the Panchayth representatives present their work carried out during the last one year and the CITIZENS sending the marks based on the presentation in addition to the

marks awarded by jury members, to find the best Panchayat in Kerala. The SMS voting format for the show was: `GKE<space> Panchayat code<space>Mark`

Kerala State Film Development Corporation (KFDC) – Movie Ticket-Reservation mBooking

A Mobile Ticket Reservation Platform was set-up for KSFDC using SMS services. The service is configured and running live at for *"Kairali / Sree / Kalabhavan"* through Shortcode 537252. The format of sending the SMS is as below:

`MBOOK <space> [Location] <space> [Theater] <space> [Showtime] <space> [No. of tickets] <space> [Date]` **Example:** For booking 5 tickets for matinee show at Kairali on Jan 20th, the SMS format is as follows: `MBOOK TVM KAIRALI MS 5 20-01-2011`

Kerala Police – Sabarimala Information Alerts/Helpline

An SMS based Helpline and Information System was introduced for the pilgrims to Sabarimala during 2010. Sabarimala is a pilgrim centre atop Nilgiri mountains situated deep in the Periayar Tiger reserve forest in Kerala, where there is a heavy inflow of pilgrims during November to January. The various information services provided for the devotees are information on pilgrim queue status, parking availability and weather status.

Queue Status SMS Format: `SBML<space>Q`, Parking Availability SMS Format: `SBML<space>P`. Weather Alerts: SMS Format: `SBML<space>W`. Sabarimala Helpline Services `SBML<space>HELP<space>` Message – the messages being sent under keyword HELP are automatically forwarded to Kerala Police Control Room for further action.

The details that are being provided by the Kerala police are based on the inputs received by them from the field through CCTV cameras.

Figure 2: a screenshot of the Kerala police website displaying the SMS format

5.3 IVR based Survey for State Planning Board

The "Sampoorna Oorja Suraksha Mission" - Total Energy conservation Mission is a State initiative aimed at achieving total energy security. The initiative required conducting a state-wide survey in order to identify households and other buildings without electricity. The conventional mode of surveying would require personnel plying throughout the state conducting the survey and recording the details in paper forms. Instead, the Planning Board opted for an IVR (Interactive Voice Response) based system for undertaking the survey. The IVR menu in the regional language was set up in a ten-digit number and this number was advertised in all major daily newspapers. Citizens were asked to call the number in question and communicate the details as required by the voice menu. The IVR was running for about a month, during which period approximately 25 000 calls were recorded. The calls were then transcribed and the personnel engaged in the transcription converted 25–30 audio files per hour on an average.

5.4 The MCARP: Mobile Crime and Accident Reporting Platform

MCARP is an exclusive solution developed for the police force for the efficient tackling of crime, accidents and traffic issues. MCARP helps the police control incidents such as riots but also traffic violations by recording the apposite visual evidence. Images are captured using mobile phone cameras by policemen and uploaded to the central server instantly via MMS/GPRS.

MCARP has been running successfully in Cochin city, Kerala, for more than a year. During this period, more than 20 000 photographs were uploaded from fifteen white-listed mobile handsets, used by the Cochin Police patrolling vehicles.

In phase-I of MCARP, the solution depended on MMS for photo uploads to the central server. As the high cost of MMS made the operations rather costly, other alternatives were explored. In order to make the solution a GPRS based one, a mobile phone application was deemed necessary. The new application would pop-up when the photograph is clicked and thereafter guide the user to upload the photograph to the central server.

5.5 Audio Guide and WAP guide for Tourism

An audio guide would provide tourists with reliable information regarding places of public interest. Tourists would call number 9048755555 and listen to the IVR menu in the preferred language. The IVR menu can be navigated by using the mobile keypad and information ranging from history of a location to important contacts can be accessed.

The WAP tourism guide would replace the conventional tourist guide-books as it would be available on the move, contain reliable information and be updated regularly.

5.6 Importance of Having a Marketing-Strategy for mGovernance: A Case-Study

It is vital to have a focussed marketing-strategy in order to promote the usage of various mGovernance services. The difference that a PR-campaign can make to the usage-pattern can be clearly observed in the HSE (Higher Secondary Education) Results of 2011.

The exam-results were made available through short-code 537252. Candidates could send their registration number via SMS to 537252 and get the result as a response to their mobile-phone. In the

graph below, the time in hours on the result-day has been captured in the X-axis (horizontal) and the numbers of SMS-hits have been captured in the Y- axis (vertical).

Graph 9: SMS requests for HSE results 2011
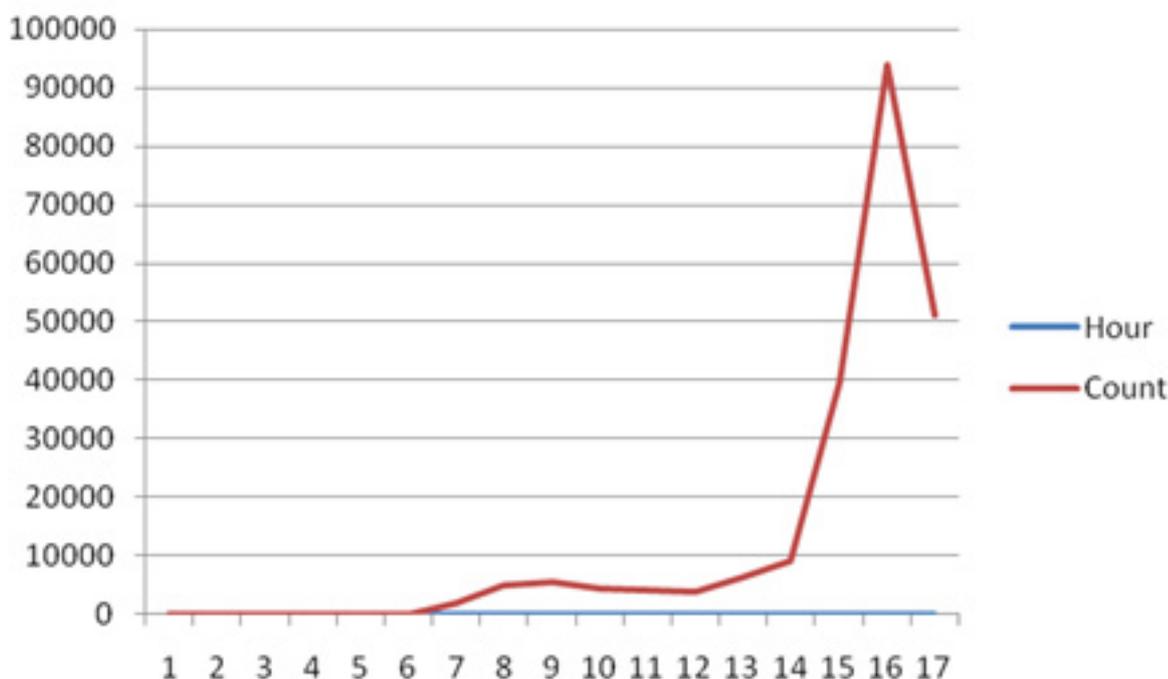
As observed in the graph, the number of hits drastically increased around the 14th hour, when the number 527252 was being advertised on television. The number of hits increased from almost 10 000 per hour to 100 000 in just 2 hours.

6. Conclusions

As observed in the graph, the number of hits drastically increased around the 14th hour, when the number 527252 was being advertised on television. The number of hits increased from almost 10 000 per hour to 100 000 in just 2 hours. The "Draft Consultation Policy Document on mGovernance" published by the responsible IT department showed that the use of mobile-phones to deliver services to citizens goes through various inter-linked stages and more specifically information, interaction, transaction and transformation ((DIT, 2011).

The 'Information' stage is the first stage of mGovernance. At this stage the services are provided through a 'push' platform or 'push and pull' platform. In a push platform, the user receives computer-generated alerts at a periodic frequency whereas in a pull platform, the user can request for services at any time.

At the next higher stage, which is 'Interaction', a two way communication is established between the user and the provider of the service. In this phase, instead of only receiving alerts, the user can SMS a code at anytime and quickly receive a response. In other words, there is an automated push happening with each pull.

The ability to facilitate transactions comes at the third stage of the development phase, which is 'Transaction'.

Last but not least, 'Transformation' is the highest order of evolution of the mGovernance initiatives. Technology is utilised to its maximum capabilities to transform the way the government functions around the mobile platform. At this stage of evolution, any initiative taken facilitates the seamless integration and flow of information between citizens and all levels of the government.

It is observed that most of the services being provided under 'Kerala mGovernance' currently fall under either the 'Information' stage or the 'Interaction' stage. The biggest challenge for the project owners would be propelling the project to the 'Transaction' and 'Transformation' stages, by properly upgrading the Service Delivery Platform and integrating it with more external systems.

Innovative models of collaboration to ensure PPP (Public-Private Participation) and the coordination of telecommunications operators are thus being considered. While the private sector has the technology expertise to function as the solution-provider or application developer, the telecommunications operators own the networks on which mGovernance services are dependent. The operators would be willing to host mGovernance services at lower costs, if the hosted service could gain prominence and open up revenue streams for them. 'Cloud-Computing' can be responsible of taking mGovernance even to those states that do not have their own Data Centres and SDP deployed by the state can be leased out to host the mGovernance applications of another state, over the cloud.

Thus, the project mGovernance in Kerala is advancing to higher levels by deriving strength from the lessons learnt during the initial phase. It is envisaged that the mGovernance project in Kerala will turn out to be the primary reference for future mGovernance initiatives across the world.

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Rethinking government in the light of the emerging organisational principles of online collective action

This paper is framed by the notion of a transition in which distinct organisational and democratic logics are emerging just as the institutional principles of the nation state are in a state of profound crisis. In some occasions, online creation communities (OCCs) are successful form of collective action online. They offer an opportunity to see how various problems of democratic governance evolve and are solved in a digital environment. In other words, they are interesting for what they can tell us about democratisation more generally and the organisational principles which are more adapted to the current environment. More concretely, OCCs can help us to analyse how governance shapes and favours the handling of increases in scale of participation and complexity in a context of the digital revolution and globalisation in which the global dimension is larger in scope and the political agenda more complex. The paper provides an empirically grounded description of the main principles of OCCs and the organisational strategies more likely to success. Finally, it ends by reflecting how the organisational logic and principles of the emerging forms of collective action in online environments are and could be a source of inspiration for governmental innovation and overcome the crisis in the institutionalisation of democracy.

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> " The organisational logic and principles of the emerging forms of collective action in online environments is a source of inspiration for governmental innovation and overcome the crisis in the institutionalisation of democracy. "

1. Introduction: The debate on the Internet and politics or democratic organising

Two particularly relevant approaches can be identified in the debate on the Internet and politics and epractices. On the one hand, one approach considers the Internet as a new channel for existing political actors and participation forms. In this approach, the Internet is seen as contributing to solving current problems of the political system and reinforcing democracy as it is understood nowadays. On the other hand, a second approach characterises the Internet as an environment, a sphere of social relationships, with economic, political and cultural dimensions, which together determine which organisational forms can be sustained and which are challenged.

In this second approach, the question is about which society is in formation in the changing environment and which organisational forms are more adapted. From this perspective the Internet is not approached as a "cure" for democracy, but as a source that, when combined with other aspects, might transform democracy.

The environment approach places the attention on the relationship between Internet adoption and organisational power, pressures, and structural changes in online collective action. This approach analyses the internal organisational logics of emerging forms of collective action in the digital environment without placing them in relation to the political institutions in an ideal of liberal democracy but instead by promising deep and fundamental transformations in the political institutions in the network society. The changes in the environment, particularly linked to New Technologies of Information (NTI) but in conjunction with other processes, are contributing to reshape collective action in a digital era. The social involves communication, and thus changes in communications effected by NTI could impact on all dimensions of social life. This contribution is framed in this environmental approach.

2. Theory

2.1 Crisis in the institutionalisation of democracy

This paper is framed by the notion of a transition in which distinct organisational and democratic perceptions are emerging just as the institutional principles of the nation state are in a state of profound crisis, and those of the private market are undergoing dramatic change. Political and economic globalisation creates important challenges for democratic governance, as much for inputs as for outputs (della Porta, 2005). Firstly, regionalism and the construction of supranational structures of government, such as the European Union, move citizens away from the process of direct decision-making. The latter tends to be transferred to more distant or complex institutions, which raises doubts as to the capacity of democratic control over decisions, a capacity which traditionally resided within parliaments. Secondly, nation-state institutions of government have undergone far-reaching changes (economic, political and cultural), due to the emergence of new demands and a greater plurality of influential actors, institutional as well as non institutional (della Porta & Tarrow, 2004). Parallel to the process of globalisation is a process of increasing regionalisation and localisation of policy (Subirats, Brugué & Gomà, 2002). New networks of multilevel interchange are emerging, in which new supranational institutions take part as much as sub-national organisations.

The decline in the parliamentary power of decision making outlined above has been accompanied by the decline of political parties' ability to channel social demands. As a result, electoral and conventional participation has decreased in the last few decades in most industrial countries (Blais,

2000). Furthermore, several studies have noted an increase in citizens' discontent towards the mechanisms and institutions of representative democracy (Dalton & Wattenberg, 2000; Norris, 2002; Pharr & Putnam, 2000).

From the perspective of the evolution of democracy, it could be argued that the above presented changes suggest that the representative democratic system is entering a process of turbulence and readjustment. Some authors also argue, however, that the crises of conventional forms of participation create resources for new forms of participation (Norris, 2002). In fact, the crisis of participation in conventional politics has been accompanied by an increase in nonconventional forms of participation and public expression (Cain, Dalton & Scarrow, 2003; Norris, 2002). In a context of crisis of the institutionalisation of representative democracy, nonconventional forms of participation, including emerging forms of collective action online, constitute both a sign of the crisis and a possible exit from it. Along these lines, one possible transformation is the development of representative democracy into a more participative form of democracy which privileges access to participation and citizen empowerment (della Porta, 2009). This paper reflects on how the emerging organisational logic and principles in nonconventional forms of participation in digital environments could provide insights to transform the institutionalisation of democracy.

2.2 Organisational environment in the knowledge based society

The digital and communication revolutions, processes of globalisation, the postindustrial economy, and the increasing expansion of education in the global North, among other important processes, have transformed industrial society into a network society of knowledge-based wealth (Castells, 2000; Rifkin, 1995). In the digital era, these processes have changed the relational environment, thereby contributing to the reshaping of collective action. NTI have reduced transaction costs, therefore transforming the cost of collective action (Benkler, 2006; Coase, 1937).

Bimber has pointed to 'information abundance' and scarce resources of attention as characteristics of this new environment (Bimber, 2003), where some organisational strategies have met with more difficulty in achieving their goals. In synthesis, the crisis of the institutionalisation of democracy has resulted in the increase of unconventional forms of participation based on new organisational forms. Additionally, the transformation of industrial society into a network society of knowledge-based wealth has changed the environment of collective action, favouring more solid organisational and institutional logics than others. In this context, it remains unclear what are the organisational characteristics of the new unconventional forms of collective action, which have successfully adapted to the environment. In addition, the role and the forms used to relate to technological infrastructure remain unclear in the emerging forms of collective action supported by technology. In order to fill the above gap, this paper addresses collective action in the digital era and how they might contribute to reshape governmental practices and the institutionalisation of democracy from an organisational perspective.

3. Methodology

Based on a combination of quantitative and qualitative empirical research, this study analyses emerging collective action taking place on the Internet. The empirical research is developed through the case of online creation communities (OCCs). Online Creation Communities (OCCs) are networks of individuals that communicate, interact and collaborate; in several forms and degrees of participation which are ecosystemically integrated; mainly via a platform of participation on the Internet, on which they depend; and aiming at knowledge-making and sharing.

A characteristic of the OCCs that contrasts with previous experiences of collaborative knowledge-making is the high quantitative jump in the number of people involved in the process. The analysis is based on a large-N statistical analysis of 50 cases, and comparison of four case studies. The methods of the case studies were interviews, participative observation and online ethnography. [1]The development of a large-N analysis is adequate for two important reasons. On the one hand, the OCCs are a recent and under researched phenomenon, the large-N analysis is adequate to describe the singularity of OCCs as a form of collective action. On the other hand, a large-N web analysis is appropriate in order to test the hypothesis on the explanatory part of the research, that is, how infrastructure governance relates to participation scale and collaboration complexity.

As part of the growing socioeconomic importance of knowledge-making forms, these examples of collective action offer an opportunity to see how various problems of democratic governance evolve and are solved in a digital environment. In other words, they are interesting for what they can tell us about democratisation more generally. More concretely, OCCs can help us to analyse how governance shapes and favors the handling of increases in size and complexity in a context of the digital revolution and globalisation in which the global dimension is larger in scope and the political agenda more complex.

The paper first provides an empirically grounded description of the organisational characteristics of collective action in the digital era. The paper also provides an empirical explanatory analysis of which organisational strategies tend to be more successful in increasing collective action in terms of participation and collaboration. Finally, the paper ends reflecting on how the emerging organisational principles in online settings are and could be a source of inspiration for governmental innovation and democratic transformation.

4. Organisational principles of the emerging forms of collective action in online settings

Some authors agree that if we regard OCCs as collective action, which occasionally constitutes large performances and produces elaborate outcomes, a number of questions emerge (Eisenhardt & Santos, 2000; Tsoulkas, 1996). How can complex knowledge-making and sharing take place? How can dispersed activities lead to the creation of a complex product? What are the basic mechanisms underlying the coordination of knowledge-making and sharing in OCCs, and where are they embedded? (Lanzara & Morner, 2003)

According to the research results, the main organisational principles of participation in OCC platforms, as a case of online collective action, can be summarised in 8 aspects: (a) the platform is open to participation. However, there is not the expectation that every one participates and that everybody contributes in the same way; (b) participation has multiple forms and degrees. Those diverse forms and degrees of participation are integrated; (c) participation is asynchronous; (d) participation in the platform is structured in small tasks and modules, which results in highly decentralised but connected participation; (e) the organisational process is transparent; (f) participation is autonomous in that each person decides their level of commitment and how they will contribute. Participation is also voluntary. Participants are not bound by a contractual relationship. As a result, participants assume the costs of participation; (g) consensus among the people involved is the more common decisionmaking form, however, methods or organisational solutions are shaped by the specific questions that must

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1   The four case studies were Flickr, Wikipedia, Social forum memory project and Wikihow. The data collection on the Social forums was mainly carried out during 2007 and 2008. Wikipedia data collection was carried out from July 2008 to August 2009. Finally, Flickr and Wikihow data collection was carried out from July 2009 to January 2010.

be answered in order to achieve a common goal; (h) participation is implementation, more than deliberation; and, in certain governance conditions, k) the communities regulate the rules and social norms that govern their interaction; and, j) the activity of the community results in a digital commons.

These organisational characteristics are not accompanied by traditional principles associated with bureaucratic organisation, such as those of pyramidal authority, centralisation, and planning (Weber, 1946). Previous research by Coase (1937) has suggested that low transaction costs lead to non-bureaucratic organisations (Benkler, 2002). Bimber (2003) has suggested that as societies move toward information abundance, there is a decrease in bureaucratically structured organisations.

The above organisational characteristics of OCC platforms shape participation, and in doing so the possibility of increasing participation is established. Much of the literature has highlighted how most OCCs have a tendency toward massive inequality in content contribution among participants, which resulted in a 90/9/1 Law (Nielsen, 1997; Ortega, 2009). That is, 10 % of the participants are responsible of 90 % of the content created. In explaining how the organisational characteristics presented above are linked to the scaling of participation, this research goes a step beyond the existing literature and provides an argument as to why participation distribution in OCCs follows an unequal pattern.

The openness to participation principle has created the possibility to participate and the conditions for participation to increase. However, participants as volunteers assume the costs of their participation. In this regard, not all participants have the same availability. The several forms and degrees of participation result in varying degrees of contribution. The unevenness in participation affects the availability of contributions. These effects on contributions ultimately maximise the possible sources of participation, and the increase in total participation. Furthermore, OCCs profit from the synergy between the different forms and degrees of participation. These are: (a) active and committed participants are important to start the OCCs and provide most of the content; (b) weak participation allows vast and diverse fields of information resources to be reached; and (c) unintended participation improves the system and act as audience. As audiences increase, the value and relevance of the content and the participation in the platform also increases. Finally, decentralisation of the participation facilitates increases in participation while maintaining a character open to participation. Decentralising participation permits the management of large-size participation, and the autonomous and transparent character of participation facilitates the allocation and coordination of different forms of participation.

In order to put together these 8 characteristics, the article proposes the concept of ecosystemic participation to stress the ecosystemic, feedback, and synergistic effects among the diverse forms and degrees of participation in the OCCs. The term 'ecosystemic participation' highlights the co-dependency and mutual adaptation of the different forms and degrees of participation in order to find an equilibrium allowing the sustainability and effective achievement of the common mission. Ecosystemic participation shifts the focus away from single and unequivocal dimensions (to participate or not participate) toward the development of dynamics in complex cohabitation and the co-evolution of diverse forms and degrees of participation. Participation is not an isolated act but an act coordinated with others and with the overall collective action. In this line, Bimber, Flanagin and Stohl (2005) suggest that recent uses of NTI for collective action challenge the notion that there is a binary choice between either participation or nonparticipation (as it is characteristic of representational forms).

5. Governance logic of online collective action

OCC governance is based on three aspects: policymaking concerning interaction in the platform, the space design or architecture of participation, and infrastructure governance. In other words, who can intervene in these three aspects and how decisions are made define the OCC's governance.

Two spaces can be analytically distinguished within the OCCs: first, participants use a platform to interact, and that platform is provided by others. Few resources are able to provide the infrastructure for very large collective processes. However, the provision part cannot be seen as a dysfunction or unimportant. It solves some of the important questions this type of online collective action raises. Previous research has mainly analysed the organisation and governance of the interactions of the community of participants, ignoring the organisation and governance of platform provision. In contrast, this research analyses not only the community of participants, but also the organisation and the governance of the platform and other infrastructure required for the collective action to take place.

Previous research has focused on analysing the governance of interaction in the platform, particularly policymaking (Burke & Kraut, 2008; Ciffolilli, 2003; Viégas, Wattenberg & Mckeon, 2007). However, there is a need to distinguish the conditions in which the participants are able to intervene in defining the rules of their interaction from the conditions in which the community cannot intervene at all. The type of infrastructure governance shapes the emerging community in several senses, including the possibility that the community governs its own interaction. Depending on the type of provider, the community has the possibility to self-govern its interaction, even though the platform or interaction governance remains in the hands of the provider.

Concerning the governance of OCCs, this research has shifted the focus from community interaction to include infrastructure governance. According to O'Mahony (2007), this shift allows for a more complete understanding of the governance of OCCs. How the platform provider is organized affects how the community develops. According to the large-N statistical analysis, the type of infrastructure provision shapes the emerging community (Fuster Morell, 2010). It is important to note that infrastructure governance influences the degree of participation and the type of collaboration in the platform. It also influences the role (or lack of it) the community plays in governing its interaction in the platform.

According to the research results, there are two main axes of infrastructure governance: open versus closed to community involvement and freedom and autonomy versus dependency on the infrastructure provider (see figure I).

Figure 1: Axes of infrastructure governance
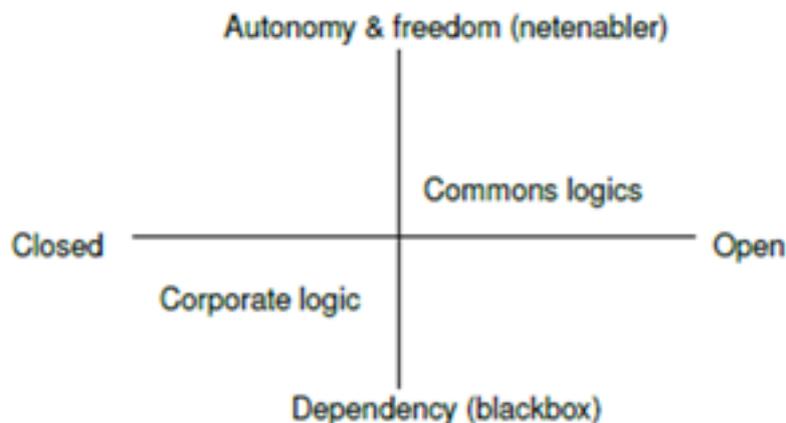
There is a qualitative difference between the OCCs where it is possible for participants to present themselves as candidates for, or be part of, the administrative body and those where such options are not available, in other words between **"closed" provision spaces and "open" or accessible participative provision spaces**.

Participation in the provider space is considered closed where it would require a capital investment or being a member of an institution (such as a university). Participation in the provider space is considered partly open where this depends on the fulfilling of certain criteria related to participation in the platform (such as a number of contributions). It is considered open when participation in the provider space is possible for anyone, that is, participation is regulated through self-selection.

The freedom and autonomy versus dependency on the infrastructure (netenabler versus blackbox) dimension is linked to the knowledge policy, in particular the copyright license and the type of software used. Netenabler conditions are defined by a copy-left license and the use of Free/Libre Open Source Software (FLOSS) code, while blackbox conditions are defined by copyright and proprietary software. On the one hand, the importance of knowledge policy is linked to the observation that knowledge-making is the goal of OCCs. In this regard, the conditions of access and use of the resulting knowledge could be considered as a "right" of the contributors as "authors" and so subject to democratic organising.

On the other hand, knowledge policy can be understood as referring solely to the conditions of access to the "knowledge outcome" of the community, yet from a broader perspective knowledge policy governs the relationships in online environments. Two contrasting logics arise from these two axes of infrastructure governance: commons versus corporate logic. Additionally, five main empirical infrastructure governance models are identified: corporate service provision, mission enterprises, university networks, autonomous representative or peer foundations, and assemblarian self-provision. Whereas the corporate service provision model is characterized by a corporate logic, the other four models follow, in differing degrees, commons logic.

The logic of the commons is characterised by openness to community involvement in providing the infrastructure, otherwise called community-oriented governance and a net-enabler policy. Community-oriented governance means that infrastructure governance is driven and controlled by the community; interaction in the platform is self-governed by the community, and both community and provider pursue a common mission. A net-enabler policy means that participants are individually and collectively free and autonomous from the infrastructure provider. As a result, the

digital commons are collectively owned and are freely accessible to third parties. Digital commons are defined as information and knowledge resources, that are collectively created and owned or shared between or among a community, and tend to be non-exclusivedible, that is, be (generally freely) available to third parties. Thus, they are oriented to favour use and reuse, rather than to be exchanged as a commodity. Additionally, the community of people building them can intervene in the governing of their interaction processes and of their shared resources. Digital commons are a continuation and adaptation of the commons approach in a digital environment. Corporation logic in this context is based on corporate-oriented governance and a blackbox policy. Corporation-oriented governance dictates that the corporate provider governs the participants' interactions in the platform. Infrastructure governance is controlled by the corporation and is oriented towards profit. The corporation does not share a common mission with the community. Blackbox policy dictates that participant interaction is private and information cannot flow easily beyond the infrastructure. Additionally, the process is individually oriented and does not generate a digital community. Where an OCC following a commons logic builds a digital commons, corporate logics cannot lead to a digital commons. The outcomes of OCCs following corporate logic cannot be defined as digital commons because they are not collectively owned or shared, even where some parts are non-exclusionary.

Finally, the community of participants building the outcome cannot intervene neither in the governing of the resulting resources, nor in their interactions. Additionally, OCCs contribute to redefining the role of civil society by going beyond Gramsci's (1971) and Habermas' (1996) notions of civic society. The characteristic elements of OCCs that are most significant in challenging these notions of civil society are that the participation goes beyond (Habermasian) deliberation in that participation has more to do with implementation. Participants implement actions; participation does not refer to choosing a public voice to guide the representatives' actions, to whom action is delegated. The overall collective action is guided by the production of informational resources. Plus, there is an economic value to social interaction in OCCs. In sum, commons logic OCCs have so far been seen only as spaces for public debate, or as constituting spaces for civic engagement in the dissemination of alternative information and deliberation. However, OCCs also challenge the market and the firm as a form of resource production and management.

The two logics of infrastructure governance shape their communities differently. Whereas corporate logic is able to raise the most participation, commons-based logic is able to create more collaborative communities.

6. As a mode of conclusions: Applicability of the OCCs organisational characteristics to governmental institutions

In a context in which the institutional principles of both the nation state and the private market are in a state of crisis, OCCs and their distinct organisational characteristics could provide insights into the reform of the institutional logics of both. In this line, some authors argue that the provision of infrastructure for OCCs is the basis of the one of the main innovations of capitalism (Chiapello & Boltanski, 2005; Moulier Boutang, 2007).

In terms of political institutions, Crouch suggests that the post-democratic era is not less democratic, rather an adaptation of the institutional logic of democracy to a postindustrial environment (2004). OCCs could be a source for expanding the political imagination in order to overcome the crisis of the political institutions and approach emerging organisational strategies.

Particularly, OCCs could be a source of inspiration in terms of handling the increase of size to the

global dimension, the formation of a knowledge-based society and the complexity of the political agenda. A growing number of processes open the debate on reformulation of global institutions toward governance forms that could better respond to the new global context: the globalisation and glocalisation of various dimensions; the reconfiguration of the global geopolitical forces, together with the increase of levels of education (and access to information and knowledge), particularly in the North; the development of a postindustrial economy toward the increase in importance of immaterial production and the emergence of a knowledge-based economy; the changes in the matrix of costs of collective action (linked to the new possibilities of communication and aggregate common interest facilitated by the new technologies of information, among other reasons). In the discussions on global democracy some insights suggest the shift from institutions of representation to commons governance (Ostrom, 1990). This is the case in the governance of diverse resources, such as natural resources, or global problems, such as climate change (Endres, Sprain & Peterson, 2009). The governance of the Internet is also an example towards the experimentation on a model of stakeholders, which integrate the diversity of the parties in the process, and which adopted a consensus on decision-making.

In this regard, the organisational logic of the governance of digital commons constitutes an example of a governance solution for processes without clear boundaries and fluid forms of belonging, with multiple parties to integrate, and in decentralised settings. The governance of OCCs and digital commons, as processes around the building and management of knowledge-making, could provide also insights on the governance of a knowledge-based society. The scientific communities are an example to point towards the recognition that communities of collaboration facilitate the environment for creativity and knowledge production. In the direction to expand the set of political solutions, there is a growing body of research literature on how NTI could be used as a channel to reinforce the current organisational form of political institutions, for instance through the adoption of online voting (Trechsel, 2007). Importantly, an incipient reflection is emerging in terms of how OCCs' organisational principles could be adopted for radically transforming the organisational form of political institutions (Noveck, 2009). In the light of this research on the governance of OCCs emerges an image of political institutions based on organisational transparency and open to citizens' control.

The boundaries of the political space are not defined in terms of territorial exclusion, but by a free and autonomous decision to take part and contribute. This offers the possibility to leave or to belong to several communities at the same time. This image appears challenging to the current political system. Furthermore, a major analysis of the pros and cons, and the risks involved in adopting the OCCs' organisational principles for political institutions is required. For example, the rationality of the process could be corrupted by private interest.

Moving to a more concrete line of applicability, a major political implication is associated with the emergence of a commons paradigm for managing collective resources (Ostrom, 1990), of which the digital commons is only one of several examples (Bollier, 2004; Hess & Ostrom, 2007). Digital commons can be supported and regulated, as political institutions regulate the market. In this line, public institutions give resources to OCCs. For example, the German National Archive uploaded nearly 80 000 historical photographs to the Wikimedia Commons[2] and Flickr has received material from the Library of Congress.[3] Additionally, there are two other main areas of democratic innovation which evoke OCCs' organisational principles: increased participation and increased transparency.

Concerning participation, some authors agree that representative democracy could move towards

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2   Source Wikimedia Commons webpage. Retrieved May 27, 2010 from http://commons.wikimedia.org/wiki/Commons:Bundesarchiv
3   Source The Commons section in Flickr. Retrieved May 27, 2010 from http://www.flickr.com/commons

a more participative democracy (della Porta, 2009). Particularly in Europe and Latin America, experiences towards this direction are emerging. The experiences of participative budgeting in Brazil are a prominent empirical example of the incorporation of more participative mechanisms into political institutions (Röcke, 2009). Another example is the interactive or network governance in Scandinavian countries with its participative decision and policy making (Sørensen & Torfing. 2007).

However, the participative character of OCCs success goes a step further. The question is not only about developing more participative forms at the level of decision-making, but more importantly, at the level of the 'implementation' of the political agenda and the functions of the political institutions. Additionally, empirical research has pointed out that the meaning of ownership in the participative process of decision-making is reduced to the 'metaphoric' meaning of having the impression that the actors involved are part of the process (Casula Vifell, 2009). However, in OCCs, the meaning of ownership is relevant in all its dimensions. Ultimately, citizens do not become 'talkers' but 'doers'. In this regard, the figure of the 'volunteer' who helps in catastrophes, or NGOs adopting part of the social agenda, is increasing in society and evokes the argument of the major force of citizens as doers or implementers. The externalisation of some of the functions of political institutions has been a process that is part of the reorganisation of political institutions in the globalisation process. Generally, this externalisation has moved in the direction of a privatisation of public services, and the reduction of the dimension and role of the state in line with the neoliberal agenda. However, OCCs show that a corporate logic is not the only way, that a commons logic could drive such moves towards enlarging citizen involvement in the implementation of the political agenda, gaining major empowerment and control over the process.

Another transformation of the political institutions that evokes OCCs' organisational principles, in this case mainly in the USA, refers to the increased claims for transparency of the political institutions. The transparency movement, or open government movement, in the United States argues for major transparency (particularly concerning lobbying activities) in the political institutions in order to reduce corruption. However, the meaning of transparency is reshaped in coherence with the concept present in OCCs. Transparency does not refer to specific moments, with delegates/representatives 'reporting' back to their electorate. It involves, on the one hand, a more continuous public 'organisational' process of the political institutions, and on the other hand, making the information generated in the political process available to the public for elaboration by the citizens. For example, making the data public on the locations where cyclists have been killed in a city will allow citizens to develop useful and innovative applications, such as the systematisation of the data (through online volunteering) into a visual map that could contribute to a better design of streets and cycle paths. In sum, while there is a difficult and challenging path to overcome the current crisis of the institutionalisation of democracy, emerging forms in online settings might suggest some inspirational reflections.

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Web 2.0 as a Megatrend in eGovernment: An Empirical Analysis of its Preconditions and Outcomes

In recent years, Web 2.0 and social media were such an enormous hype, that today the popularity of these terms seems to be declining already. However, scientists and practitioners in (e)Goverment are still bothered by important questions, like: what is Web 2.0 and should we do something with it? This paper gives an extensive description of what Web 2.0 entails and to what degree it is really something 'new'. Consequently, it analyses the critical preconditions and main outcomes of working with Web 2.0 in governmental organisations.

The analysis is based on a worldwide study of real-life cases, which resulted in the discovery of four relevant cases. In these cases we found four critical preconditions for working with Web 2.0, namely: technology, cultural change, training of staff and room for experimentation. Similarly, we found three main outcomes of working with Web 2.0: the 'New World of Work', the relationship with the outside world and the added value of social media.

We conclude that Web 2.0 has arrived at a critical point in its development cycle and that, now the time of the hype is over, its true added value needs to surface or the concept and its advocates will slowly fade away.

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Web 2.0, government, literature study, case study, local government, Netherlands

" Should local governments go with the flow, play wait and see, or discard the rise of Web 2.0 altogether? "

1. Introduction

The use of Web 2.0 and social media is growing rapidly in recent years. Or at least, much is talked, twittered and written about it. The management books in which the Web 2.0 gospel is preached, tumble over each other (e.g. Shuen, 2008; Casarez, Cripe, Sini & Weckerle, 2009; Shelly & Frydenberg, 2011). Those who do not follow the 'digital natives', are out of the game. The developments go so fast that the popularity of the term 'Web 2.0' is already declining worldwide (see Figure 1). And we did not even know what it meant.

Figure 1: Popularity of the term 'Web 2.0' on Google, worldwide, 2004-2010 (*source: Google Trends*)

The decline of the theoretical concept 'Web 2.0' is also a sign that we are in the next practical stage, where the emphasis is on *using* Web 2.0 applications, the so-called social media. Since the hypes follow each other so quickly, it is hard to keep track of the latest developments. Fact and fiction are intertwined (TNO, 2008).

If one views the development of Web 2.0 from a little distance, a pattern can be recognised that is characteristic for the introduction of any new technology. Creating high expectations is inherent to the introduction of a new technology (cf. Te Velde, 2004). After that, there is often a backlash: the potential of the technology seems very bleak when faced with reality. Only in the longer term, the expectations fit better with reality and use stabilises itself – if the technology did not die a quiet death yet. This is why the impact of new technology is often overestimated in the short term and underestimated in the long term.

In this paper, we focus on how governments, in particular local governments, should deal with the 'Web 2.0' phenomenon. Is there a revolution in the making, should they play wait and see, or should they discard the development altogether? We focus on the preconditions and effects for the internal government ('G2G', or even within a specific governmental entity).

Specifically, we deal with the following research questions:

1. What concrete experiences exist in working with Web 2.0 within a governmental context?

2. What critical preconditions are required for this new way of working?

3. What are the main outcomes of this new way of working?

We try to shed light on these important questions, through presenting the results of an international

study into examples of Web 2.0 applications. We performed cases studies and confront the outcome of this process with findings from literature. We pay specific attention to the effects of the use of Web 2.0 on new ways of working and labour quality.

The selection of cases was based on a global desk research. Our starting point in the Netherlands was the website 'ambtenaar 2.0'[1] [civil servant 2.0]. We also contacted some active users of this website about interesting and relevant cases. Starting points abroad included the meta-review of Robin Broitman,[2] the overviews of Peter Kim[3] and U.S. Gov Twitters,[4] the cases of the Collaboration project,[5] the portal GovLoop[6] and the eGovernment Resource Centre of the Australian state of Victoria.[7] Eventually, we screened more than one hundred public sector cases.

Most of these cases concerned the relationship between government and citizens. These cases were dropped, as the focus of our study lies on the effect of using social media on the quality of work within municipalities. Of the remaining cases, a large number was dropped as well. They usually relate to (desired) future developments, or simply bring little news.

Of course it may very well be – given the scope of this study – that we overlooked relevant cases. For now, however, we must conclude that we found very little interesting cases in which the actual impact of Web 2.0 on working within municipalities plays a role.

The four selected cases are:

- The intranet knowledge management system of the Environmental and Building Department of the municipality of Amsterdam, and two related discussion sites;[8]

- The use of Yammer and MS Communicator within the municipality of Leiden;[9]

- The training portal 'Kookpunt Veghel'[10] [boiling point Veghel] and the related Web 2.0 course;

- The 'Government 2.0 Action Plan Victoria',[11] Australia.

The remainder of this paper is structured as follows. First, we define the concept of Web 2.0 and related terms like social media. Although most people have 'some idea' what Web 2.0 means, it is important to consider how it actually differs from 'Web 1.0' and to what degree it is really 'new'. The core of this article however, is formed by two paragraphs which describe the critical preconditions for and main outcomes of working with Web 2.0 in eGovernment. Finally, we present our main conclusions and implications for practice.

2. Web 2.0: a piece of jargon?

One obvious place to look for a definition of the rather fluid notion of 'Web 2.0' is the social medium Wikipedia. The online encyclopaedia defines Web 2.0 as "[associated with] web applications that

1   http://www.ambtenaar20.nl/
2   http://www.interactiveinsightsgroup.com/blog1/social-media-examples-superlist-17-lists-and-tons-of-examples
3   http://wiki.beingpeterkim.com/
4   http://www.govtwit.com/
5   http://www.collaborationproject.org/content/cases
6   http://www.govloop.com/
7   http://www.egov.vic.gov.au/
8   http://www.handhaving20.nl/; http://www.tekstentoelichting.nl/
9   http://www.leiden.nl/gemeente
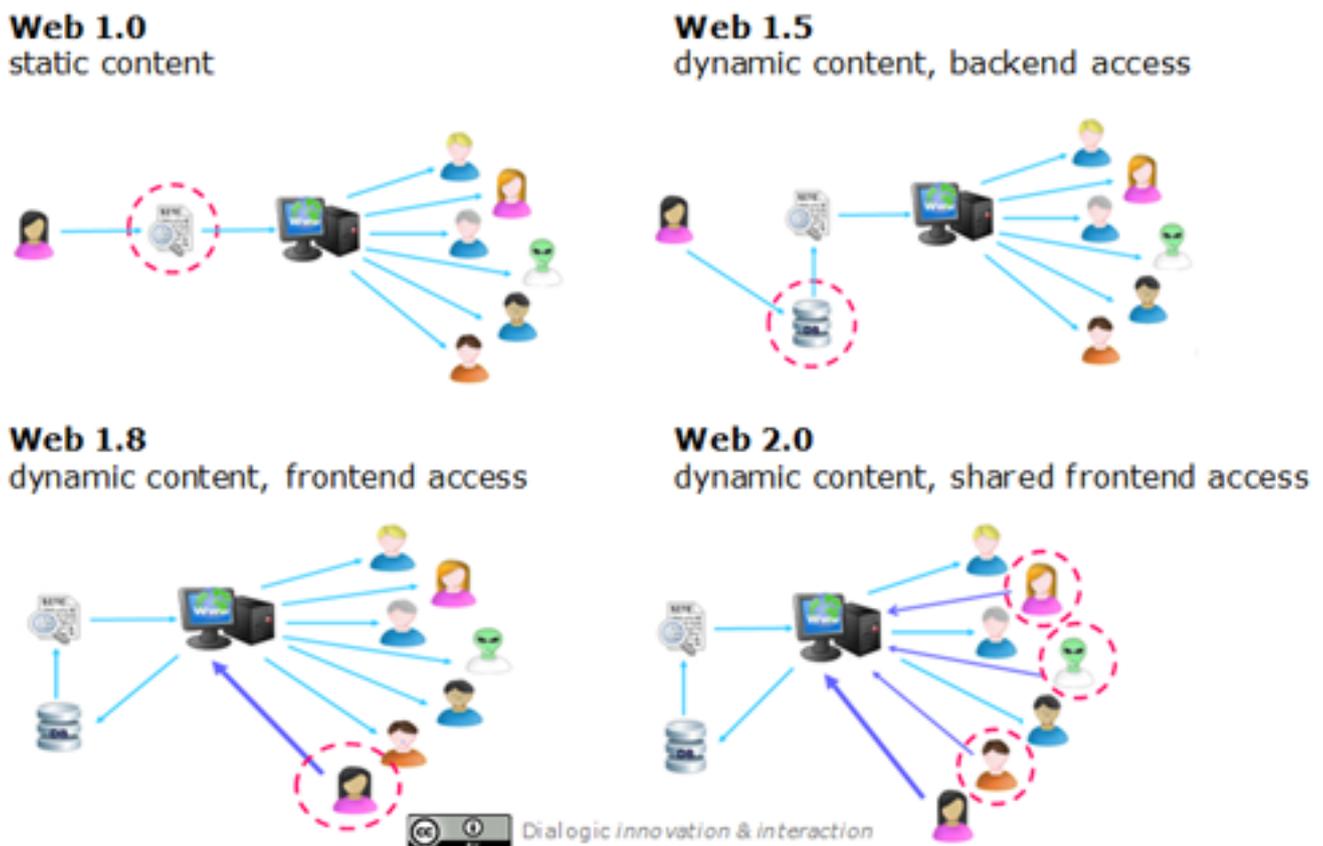10   http://www.mindz.com/plazas/Kookpunt_Veghel
11   http://www.egov.vic.gov.au/victorian-government-resources/government-2-0-action-plan/government-2-0-action-plan-victoria.html

facilitate participatory information sharing, interoperability, user-centred design, and collaboration on the World Wide Web. A Web 2.0 site allows users to interact and collaborate with each other in a social media dialogue as creators (prosumers) of user-generated content in a virtual community, in contrast to websites where users (consumers) are limited to the passive viewing of content that was created for them" (Wikipedia, 2011).

The crucial part is in the last sentence: the possibility for internet users to interact and collaborate. From a technical point of view the difference with 'Web 1.0' is only gradual. Tim Berners-Lee, the inventor of the World Wide Web, therefore considers Web 2.0 as a "piece of jargon". According to Berners-Lee, he has designed the Web from the start as a collaborative place where people can interact (IBM, 2006). Nothing new here.

There is, however, certainly a radical change but it rather concerns organisational culture. The watershed is that the owner of a website opens up the content for third parties (other users) and consequently largely loses control over that content. This is the shift from 'Web 1.8' to Web 2.0 in Figure 2. This is a minor and logical step from a technical point of view. Yet for government organisations, which are traditionally rather closed, this is a major step.
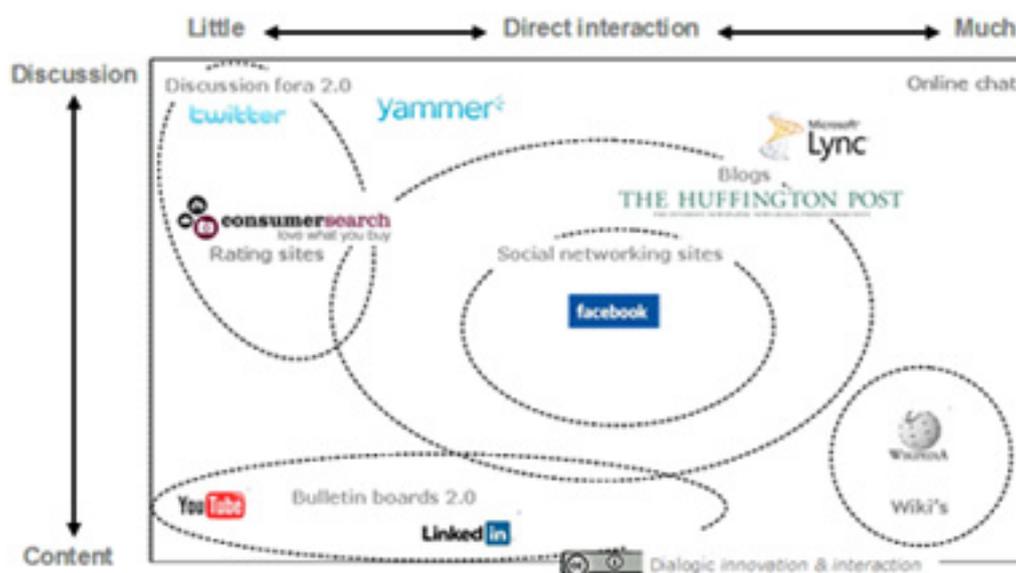
Figure 2: The evolution from Web 1.0 to Web 2.0

Web 1.0
static content

Web 1.5
dynamic content, backend access

Web 1.8
dynamic content, frontend access

Web 2.0
dynamic content, shared frontend access

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Berners-Lee certainly has a point if he states that the internet has been 'Web 2.0' from the start. The founding fathers of the internet (that is, the packet-switched Internet Protocol) willfully designed the system so that the intelligence is at the fringes of the system, and thus control in the hands of the users (Sugden, Te Velde & Wilson, 2009). The gradual shift from Web 1.0 to Web 2.0 extended

these advantages also to the level of applications. Individuals can currently install and administer applications that previously were the prerogative of large, centralised organisations. Examples include comprehensive knowledge management systems (wiki's such as Wikipedia[12] or Wikileaks[13]), press offices (blogs[14]), TV stations (YouTube[15]) and telephone exchanges (microblogs such as Twitter [16]and Yammer[17]).

Based on the principle of distributed, shared access to websites, a great number of social media applications have been developed. All sorts and conditions of social media are already available. It is however important to keep the distinction between two basic types of use: communicating (that is, the exchange of messages – with a focus on the persons who exchange the messages) and knowledge sharing (the exchange of content – with a focus on the content itself). Twitter is an example of the first type of use, Wikipedia an example of the second.

A second dimension to distinguish between social media is the degree of interaction. All things considered, all social (sic!) media are at least to some degree interactive. Yet the exact degree varies quite a lot. The use of Twitter and YouTube basically boils down to (one-way) sending. Of course Twitter can also be used to pose questions and thus share knowledge. However other social media are much more suitable for that purpose. In this respect there is hardly any distinction between Twitter and traditional communication media such as telephony. It is only much faster and has a broader reach. Rating sites such as Consumersearch[18] are an intriguing intermediate. Although the individual use again boils down to sending, the collective result of all this parallel sending is a robust piece of knowledge, namely a weighted judgement of products. The latter is a nice example of collaborative user generated content – one of the hallmarks of Web 2.0.

Figure 3: A typology of social media

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12 http://www.wikipedia.org/
13 http://213.251.145.96/
14 http://www.huffingtonpost.com/
15 http://www.youtube.com/
16 http://www.twitter.com/
17 http://www.yammer.com/
18 http://www.consumersearch.com/

All examples mentioned in Figure 3 are based on user-generated content. The essential use is, again, the degree of actual (sic!) interaction. The most extreme case of united collaboration (at least in terms of content) is Wikipedia. All users are essentially writing a text together. Although discussion occurs, direct real-time communication between authors is limited. Blogs are the most of the most versatile social media. Social networking sites such as Facebook could be regarded as a subclass of blogs. Users can upload their own content and can indirectly react on the content that is uploaded by other users. Somewhat ironically, despite the label of the subclass, it often does not lead to real collaboration. Once again it usually boils down to parallel sending. The optimal combination of interaction and discussion does not (yet) seem to exist. Most promising applications at this moment are integrated online communication tools such as Microsoft Communicator Server/Lync.[19] The comparison is not entirely fair, since these are essentially collections of different social media.

So far the discussion has mainly been on technological issues. However, as has been stated before, the major change with regard to Web 2.0 concerns organisations and culture, not technology. This is in line with the (true) platitude that the major bottleneck in the implementation of IT is the organisation itself, not the technology. The implementation of Web 2.0 applications does not diverge from this general rule. The biggest challenge is the mutual adjustment of technology, organisation and labour.

In the present discourse on Web 2.0 these two issues – required preconditions and desired aims – constantly intermingle. In the ever growing popular literature (e.g. Shuen, 2008; Casarez et al., 2009; Shelly & Frydenberg, 2011) a rather rosy picture of 'Future 2.0' is being sketched (and a rather grim picture of 'Present 1.0'). Recurring message is that the rise of Web 2.0 changes organisations from hierarchical, introverted and supply-driven to flat, transparent and demand-driven ones. Everything should change and everything will be better. The optimistic vision that is collectively being heralded by the army of Web 2.0 experts and self-appointed gurus often has a strong moral connotation. For which companies do not want to "foster the development of new ideas, tap into critical thinking and knowledge, and enable the synergy of teams to revolutionise existing business models and set them on the right path for future success" (Casarez et al., 2009)? Most Web 2.0 advocates do not just think that organisations will acquire these pleasant traits; they also think the organisations *should* have these traits. The use of social media therefore gets a much broader, almost ideological meaning.

Note that these critical comments are not specifically aimed at Web 2.0. We have already argued that the creation of high expectations is inherent to the introduction of any new technology. The call for renewal can be traced back to similar universal patterns. In the management literature, there has been talk about "new practices for a new era" for at least one hundred years. Eccles & Nohria (1992), for instance, cite Mary Parker Follett (1926) who calls for an emphasis on 'cross-functioning' – on the replacement of 'vertical authority' with 'horizontal authority' – in order to promote the exchange of knowledge in organisations. In other words, there is nothing new about the alleged contrast between Web 1.0 (=old and bad) and Web 2.0 (=new and good). This does not mean that the rhetoric around Web 2.0 should not be taken seriously. On the contrary, managers and administrators live in a rhetorical universe – a universe where language is constantly used not only to communicate, but also to persuade and even to create (Eccles & Nohria, 1992). New concepts, such as 'Web 2.0', 'user generated content' and 'digital natives' create a new reality. If enough people perceive this reality as real and live to it, actual changes will occur in culture and organisations.

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19 http://en.wikipedia.org/wiki/Microsoft_Lync

3. Preconditions for Web 2.0

Based on a review of empirical literature and our analysis of the four cases, we come to seven central issues regarding the use of Web 2.0 in governmental organisations. Three of these are main outcomes; the remaining four are necessary preconditions to arrive at the outcomes.

Preconditions for Web 2.0:

1. Technology

2. Cultural change

3. Training of staff

4. Room for experimentation

Outcomes of Web 2.0:

1. New ways of work

2. Relationship with the outside world

3. Added value of social media

In the remainder of this section we will discuss the preconditions; the outcomes follow in the next section.

3.1 Technology

The most important dispute in science and technology studies is whether society steers technology or the other way around (Van der Pot, 1994). This is an apparent contradiction. Technology always originates from the society within which it is developed. As such it is nothing more than a piece of social reality that is frozen in cog-wheels, crankshafts, bits and bytes. But exactly because this piece of reality is frozen, it has a structuring effect on society. Technology has a certain 'hardness'. It is designed with a specific view on social reality and it is not easy to deviate from the original purposes which are hard-coded in the design.

In the Amsterdam case we found that the rather conservative culture of the (traditional bureaucratic) organisation is indeed hard-coded in the IT-systems. The settings of the administrative rights can be directly traced back to the organisational compartmentalisation of the departments. Access rights are allocated by department. Colleagues from other departments do not have access – let alone other civil servants. It took several years before the subject-matter experts gained control over the content of the intranet. Initially for every change in the content, prior permission had to be asked from the official top.

The design – or 'frozen reality' – of social media is diametrically opposed to the traditional way into which IT-systems are arranged. The media enable employees (as well as citizens) to implement their own communication and knowledge management systems *without the help of an IT-department*. In the Amsterdam case, the social media proponent was so frustrated about the opposition from the top and the IT-department that he built an extensive knowledge system in his own time and at his own expenses. Although he was also the founding father of the internal knowledge management system, he has deliberately decided not to link the two systems later on.

In the Leiden case the IT-department takes an enlightened stance. The internal use of social media

is permitted as long as the security of the internal network is not compromised. Consequently the department turns a blind eye to the use of Yammer, but the use of Hyves – the Dutch Facebook – is not allowed (due to the large amounts of spam and the security risks involved). Also the internal use of own laptops and own software is permitted. In this case, this was based on rather pragmatic arguments. The internal use of own hardware and applications cannot be controlled anyway and with the rise of smartphones the fences are definitely down.

Elsewhere the situation is less favourable. In response to a call to experiment with social media on the workplace, some civil servants cynically replied that they would love to do so, but that their IT-department has sealed off the internal IT-system. Nothing should and could be installed. Social networking sites and streaming video are blocked, as is video conferencing. While working at home is permitted, only e-mail can be used.

3.2 Cultural change

Across all cases we found a clash between the traditional closed hierarchical organisation and the new, open and horizontal networks. According to the proponents of the Web 2.0 ideology, performance increases with less control and more freedom, not with more control. This is because the capacities of employees are much better utilised in horizontal, open organisations than in vertical, hierarchical ones. The transition does not occur without a fight. The existing organisation does not adapt easily to a changing outside world. Likewise, it finds it difficult to 'give back' responsibility to the employees. The internal organisation is stuck in the old hierarchical ways of thinking, whereas according to the informants solutions are outside the traditional structures. What can be seen right now is a constant backlash from the traditional organisations to maintain the present situation:

- As indicated in the previous section, technical obstructions are being raised against the use of social media. The IT-department often chooses side with the traditional management. To halt changes, often technical arguments are put forward. However this often has more to do with personalities than with technology. Furthermore, because of the rise of Web 2.0 many more IT-activities can be outsourced. This is a direct threat to the IT-department's traditional position of power.

- Obstacles can also be economic in nature. No budget and/or time is made available for the use of social media (such as workplaces where social media can be tried). At the same time, large sums of money are being spent on traditional IT-systems.

- Senior civil servants repeatedly state that Web 2.0 is just a fad. According to one of the informants this is partly true, but it is also a self-fulfilling prophecy. Because people believe Web 2.0 is a hype, they will live to it – especially if the message comes from the top. Obviously the reverse also holds. Once again this underlines the importance of rhetorics.

- Guidelines are introduced to control the use of social media by civil servants and politicians. Exactly how restrictive these guidelines are, varies from case to case. The Social Media Guidance from Victoria, Australia states that the same principles as before are still valid. Civil servants should be careful in their external communication and should be keenly aware of the fact that the senior politicians are eventually responsible. Thus the good old motto "do not be stupid" still holds. However, civil servants should be extra careful because information spreads much faster, and messages will always be kept on the internet. Victoria actually goes very far in recording messages. All messages sent with social media should be kept, so that they can always be retrieved and checked later on. Contrary to this position, several Dutch informants have a very strong position against guidelines. They think that the distinction that is being made between

the roles of a civil servant and citizen are entirely artificial. The only goal of communication protocols is to dam the freedom of employees.

Another important issue with regard to culture which is emphasised in management literature concerns the presumed gap between the digital natives and the older generation ('digital immigrants'). For instance, it is argued that local government would not be able to attract young staff if they would not permit the unrestricted use of social media. In practise though, it seems that the influence of the digital natives is less strong than is assumed. This is because especially young staff members – who are in their first job – usually quickly conform to the existing culture in the organisation.

Secondly, the conservative stance from the digital immigrants towards the use of social media does not only occur at the top (fear of loss of control) but also at the work floor. The fear of change is widespread. Part of the staff is just not waiting for more transparency and sharing of information outside their unit. One of the informants observed that people like to work in cubicles because they feel safe. Thus the walls are not just within the information systems but also in the heads of people.

A more important gap is the contrast between conservative and innovative employees. An important long term effect of Web 2.0 is a gradual change in the type of individuals that work for the government. Social media have greatly lowered the barriers to enter into social contacts on a broad scale and to undertake activities. According to one of the informants, this is a fundamental change that sweeps through the entire society. Web 2.0 will unleash unprecedented forces that will give strong impetus to innovation. Apparently this has a negative impact on governments as the most entrepreneurial people will leave. However, according to the same informant the reverse argument also holds. Because of the greater room for employees (especially in combination with the 'new ways of work', see hereafter) it is now possible to retain entrepreneurial employees who would have otherwise left. Passionate adventures now have a licence to innovate (Hodgkinson, 2010). The crucial point is that management should give room for internal entrepreneurship. Ironically, less control is supposed to lead to more productivity. If not enough room is given, there is indeed a fair chance that the most entrepreneurial employees will leave.

However, despite all bottom-up activities of entrepreneurial employees, without blessing from above nothing really changes. From all cases it is very clear that commitment of the management is a necessary condition to make changes happen. McKinsey somewhat paradoxically defines it as the first of the six critical factors for Web 2.0: "transformation to a bottom-up culture needs help from the top." (Chui, Miller & Roberts, 2009). This becomes strikingly clear in the Veghel case where Web 2.0 initiatives became only possible after all senior civil servants had been replaced. Under the old regime, the focus was on control. Only under the new management, more freedom was given. For the silent majority, explicit commitment from the top is crucial, because it gives the signal that the use of social media during working hours is permitted, and in this particular case, is even commendable.

3.3 Training of staff

Training of staff in the use of social media is an important issue in all cases. In Victoria for instance, 'capacity building' is one of the four pillars of the action plan government 2.0. It is, in fact, regarded as the most critical factor for the long-term success of the programme (Hodgkinson, 2010). On closer inspection, there is a lot to criticise. The action plan has three parts: 'managing risks', 'government 2.0 toolbox' and 'sharing ideas and best practices'. The first part emphasises control, the third part boils down to a wiki filled with rather poor examples. The second part seems to be most promising. It consists of a social media primer, a risk management toolkit (risks again), some exemplary business cases and evaluation manuals. However hands-on courses on social media are

missing. This is remarkable, since it turns out that the possibility to experiment with social media is a critical condition (see next section).

One important bottleneck that appears in the Dutch cases is the great difference in digital skills between employees. Employees are often afraid to admit that they actually know little about IT. Although there are sufficient possibilities in the Dutch cases to brush up digital skills, in general the courses are severely underused. There seems to be a vicious circle. Employees who are afraid to admit that they lack digital skills are less inclined to follow training than employees who are already skilful and enthusiastic. As a result, the digital divide only widens further. It is therefore essential to create a space where people can experiment with social media without risk.

3.4 Room for experimentation

The need for (a) space to experiment with social media reoccurs in every single case. Employees have to – literally – play with new applications before they are able to see the added value. In all cases such places have been established. The Veghel case even revolves entirely around this place. In this small municipality, a self-appointed Web 2.0 guru – a part-time self-employed professional who is still civil servant in another small municipality – has introduced the 'Web 2.0 pressure cooker'. Participants are made familiar with a wide range of social media in 23 simple steps. Focus of the course is to overcome cold feet. Minimal 30 participants are required and these 30 in turn have to share their experiences with at least three other people within the organisation.

In the Leiden case, one of the employees has singlehandedly installed Yammer without asking for prior permission from the IT-department. The latter has turned a blind eye to the use of the application, as long as it does not compromise the security of the internal network.

In Victoria – outside the capacity building action plan – the Ministry of Justice has introduced a Twitter training where employees learn to communicate in concise messages and where they can try out which tags work best in a 'low risk environment'.

4. Outcomes of Web 2.0

4.1 New ways of work

New ways of working have been introduced far before the rise of social media. In the Netherlands, several big white-collar organisations have been experimenting with distance working since the mid nineties. About one decade later, Bill Gates introduced the notion of the 'New World of Work' (Gates, 2005). Although the starting point for the 'new ways of working' is different than the Web 2.0 ideology, it appears that the developments are closely intertwined. In a way, there seems to be a symbiotic relationship: the two trends need each other to grow further. So far, distance working has hardly gained a foothold in Dutch local governments. Under the old centralised regime, expensive distance learning solutions were needed. The wide availability of Web 2.0 applications, in combination with the strong growth of smartphones, has made it much cheaper to really work 'any time from any place'.

However, more important than the economic arguments are the changes in culture that accompany the rise of Web 2.0. Employees are getting more used to the fact that the boundaries between work and life are fading. This facilitates the introduction of new ways of working. The other way around, in offices where the new ways of working are introduced, the use of Web 2.0 applications

will increase. The two trends reinforce each other. Web 2.0 could pull the new way of working out of its current deadlock. Thus flexibilising work can be both cause and effect of the use of Web 2.0 applications.

A precondition for the new ways of working is to steer purely on output. Currently, in most government organisations steering is rather done on input (e.g., physical presence). This is mainly a matter of lack of trust. Managers think that productivity of their staff is lower offsite than onsite. Meanwhile, in the aforementioned organisations that already experiment a long time with new ways of working, the balance seems to tip too much to work instead of life. Managers there have to actually put a brake on work. Consequently, there is a shift from control on details to care in the broadest sense of the word.

In a similar vein, one of the informants notices that steering on output goes beyond deadlines, deliverables, milestones and targets. The essence is that the professionalism and substantive knowledge of employees is (again) central. This trend is diametrically opposed to the strict separation between process and content, that has been introduced in government since the nineties. The essence of the new ways of working is that the responsibility is returned from the 'process managers' to the 'content experts'. These experts should only be judged on the quality of their work. This can only be done by peer experts (cf. peer review in science). This fits neatly with the shift towards horizontal, open networks in the Web 2.0 ideology.

4.2 Relationship with the outside world

The internal communication is indirectly effected by communication with the outside world, more particularly with peers and with citizens.

Communication with peers outside the organisation is especially important for knowledge sharing. This process is greatly facilitated by the use of social media. Based on sheer numbers, there is always more specialist knowledge outside the organisation than inside. According to one of the informants it is therefore an obsolete idea to shield organisational knowledge in closed intranets. Experts pull their knowledge largely from their community of peers. It is no longer possible to shield information. For this reason, in the Amsterdam case the focus shifted from closed intranets to external, semi-open wiki's – despite the acknowledged success of the intranets.

With regard to communication with citizens, we found that Web 2.0 is mainly introduced 'outside-in', that is, from the front office to the back office (Osimo, 2008). Social media have greatly boosted communication and knowledge sharing between citizens. This leads to a higher demand on front offices (both in terms of quality and quantity of the questions asked). In turn, the demand on the back office increases as well. The complexity of the questions increases, while simultaneously deadlines get tighter. The use of social media is pivotal to increase the efficiency and effectiveness of communications and knowledge sharing within and between government organisations.

In the Leiden case, demand for Web 2.0 applications comes mainly from the front office. Lync is introduced to improve communications with the back office. Not only does the application support multi-channel communications (telephone, chat, video), but due to the seamless integration with Microsoft Outlook it also shows the exact status of the receiver. In the Veghel case, a different solution is sought. Staff from the back office is put closer to the front office.

In Victoria, the increased degree of interaction with the outside world is acknowledged. The speed and reach of social media enables real-time interaction with citizens at a large scale. At the same time, it increases the risks in terms of reputation and business interests of the government.

4.3 Added value of social media

The basic premise of Web 2.0 is that information is shared with others that was hitherto only used for own use (Web 1.0). With regard to the first basic function – communicating – the added value of social media vis-à-vis traditional media seems to be limited. This is because there are many more traditional alternatives for communicating than for knowledge sharing – the second basic function. The difference between SMS and Twitter and between calling and chatting is only gradual. It is mainly in terms of ease, speed and reach.

Whether social media will really replace traditional communication tools remains to be seen. At this moment, local governments are only in the first stages of the adoption curve. Innovators and early adopters will start using social media anyway because it goes with the fashion. However the next cohort, the early majority, will assess the added value of social media much more pragmatic. In the short run, ease of use seems to be the most critical factor.

The (open) question is whether the more efficient way of communicating also leads to a more effective way of knowledge sharing. A well-known thesis is that the quality of information increases when more people comment on it – Linus' Law or "given enough eyeballs, all bugs are shallow" (Raymond, 2000). According to one of the informants, the use of social media widens the group of critical followers. This has a triple positive effect on the quality of the policy process: it improves policy preparation (quality of input increases), it enables better control during policy implementation, and both eventually increase public support for the policy. However these improvements do not occur automatically. It is of utmost importance first to link up to a group of critical followers and secondly to have them react on the information. In other words, the process involves sending *and* receiving within a semi-closed community of peer experts. If and only if such an interactive process can be sustained, the quality of the information outside the organisation is indeed superior to the information inside. Thirdly, only if the quality of the information is the decisive benchmark for assessing the functioning of the organisation, the closed, vertical hierarchical organisation will indeed give way to open, horizontal networked organisations. Often, one or more of these essential ingredients are missing. Twitter for instance is very suitable to send concise messages to a very large group of people. This is very useful in case of emergencies, such as the swine flue in Australia in 2009. The downside of speed and reach is that information is too easily passed through without decent assessment of the quality. This is especially problematic when information is spread through a large diffuse group of laypeople. In a similar case of swine flu in Mexico, the highly effective transfer of false rumours gave rise to near mass hysteria (CNN, 2009). In short, whether the use of social media has added value in terms of quality is largely determined by the quality of the networks that are being mobilised. Social media strengthen social contacts but do not replace them. Stated differently: social media are particularly useful for social people. Proponents of Web 2.0 use the reverse argument: the fact that some people do not recognise the added value of social media is because they are not social enough. In either direction, the use of social media widens the gap between people with and without an extensive social network.

In the Amsterdam case, the success of the wiki could indeed be largely reduced to the extensive social network that the knowledge manager already had prior to the use of the application. Furthermore, the fact that he considered leaving the organisation despite the success of the wiki could be explained by the fact that political considerations presided over the quality of information.

This brings us back to the fundamental question whether the more efficient way of communicating leads to a more effective way of knowledge sharing. For the time being – at least within local government – we mainly find innovators and early adopters who pass the Web 2.0 ideology on to each other. The use of social media seems to be a goal in itself. Concrete *applications* of social media

(that is, social media as a means to an end) are extremely scarce or altogether non-existing. *How* the social network is organised is more important than the use of social media per se.

However, the fact remains that the specific technical characteristics of Web 2.0 applications certainly affect the quality of the information that is being exchanged. The devil is in the details here. The difference between Twitter and Yammer, for instance, is that the latter is based on *closed* communities. This enables much better control over the content. Furthermore, comments within Yammer are organised in threads (similar to bulletin board systems). This is a much more orderly structure than the highly dynamic timeline of Twitter. Therefore, Yammer seems to be more suitable for knowledge sharing than Twitter. Indeed, in practice we found that many more questions are posted within Yammer than within Twitter, which is mainly focused on one-way sending. But again it is the quality of the underlying social network which eventually determines the quality of the information.

5. Conclusions

Web 2.0 and social media are at a critical point in their development cycle. The contrast between high expectations and – currently – little visible outcome is stark. It remains to be seen whether Web 2.0 really has added value. Now the hype is over, this will soon become clear.

We have described the four critical, interrelated preconditions for successful implementation of Web 2.0 and its applications. First, the technology should be available, but employees should also be allowed to use it by both their superiors and the IT department. This is related to the second criterion: cultural change. All kinds of objections are being put forward by traditional organisations to maintain the status-quo. Basically this boils down to a distinction between conservative and innovative employees. Third, training of staff was found to be an important issue. Here we see another distinction: the difference between employees regarding their level of strategic IT skills. This leads to a fourth precondition: room for experimentation. Employees need to be able to literally play with the technology before they can understand the added value and will be able to integrate it in their day-to-day work.

Similarly, we found three main, interrelated outcomes of the use of Web 2.0. First, the use of Web 2.0 facilitates the introduction of new ways of work (and vice-versa). This entails working 'anytime, anyplace', steering on output and giving responsibility to the expert (knowledge) worker. Second, the use of Web 2.0 significantly influences the relationship with the outside world. Indirectly, this has a pervasive effect on the internal relationships. First, the position of experts is strengthened because knowledge can easier be obtained in the outside peer community. Secondly, the rise of social media use leads to more C2C and C2G communications. This puts a higher demand on the front office and indirectly also on the back office. Finally, we discussed the added value of social media. Open questions remain whether social media will replace traditional means of communication and whether they indeed lead to a more effective way of working.

Based on our analysis of the four cases – but also on our much broader desk research described in the beginning of this paper that involved more than hundred cases – we conclude that for G2G collaboration, concrete, successful applications of Web 2.0 are extremely scarce at the moment. However, the specific (technical) characteristics of Web 2.0 applications certainly may affect the quality and quantity of exchanged information in positive ways. This calls for an objective assessment of the actual added value of social media in the daily work of civil servants.

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