

Modernization of Greek Public Sector: Results from eGovernment Law Application and Next Steps

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Abstract: In recent years, many governments are working to improve public sector's efficiency and effectiveness. The rapid progress in Information and Communication Technologies (ICTs) leads to changes in the way public organisations provide services to citizens and businesses, and in the way they handle their internal operations. Governments, in their effort not to lag behind in the eGovernment race, are often caught totally unprepared and come close to bringing the country to a standstill. One of the fundamental elements to soundly ground the modernization of public sector is the application of an appropriate legislative framework. Such a framework copes with the challenges that arise from administrative, legal, institutional and technological factors. This paper briefly presents the Greek legislative framework, explores the initial results after the enactment of the Greek eGovernment law and discusses next steps and possible challenges in the future.

Keywords: eGovernment, Legal Framework, Public Administration Change

1. Introduction

During 21st century, researchers, officers, politicians and practitioners deal with various issues surrounding Information and Communication Technology (ICT) utilization in government. The contribution of ICT to the changing nature of public administration is indisputable. The development and application of technology enable public organisations to store, process, manage and dispose public data in a more efficient and effective manner (Moon, Lee and Roh, 2014). Governments worldwide, recognizing the benefits, have started to introduce information and transactions online, improving both the provisions of public services at the local, state, and federal levels and optimising public sector's internal operation. Apart from technological infrastructure encouraged by appropriate ICT policies one main obstacle that governments are called to surpass is the establishment of the appropriate eGovernment legal and regulatory instruments (Schware and Deane, 2003), (Riabushko, 2014).

Given the scale of public administration change, in traditional governance institutions and government-citizen relationships, a critical issue is how governance will regulate the digital transformation and how exactly should the eGovernment operation and processes will be legislated (Gil-García and Pardo, 2005), (Villanueva, 2009), (Almarabeh and AbuAli, 2010).

Restrictive laws and regulations of traditional public administration operation, developed prior to or in ignorance of ICT, can hamper eGovernment (Bonham, Seifert and Thorson, 2003), (Omeire and Omeire, 2014). One strategy for responding to these challenges is to invest in changes to the regulatory environment that allow for or enable adoption of emerging technologies (Chourabi et al., 2012). Digital signature technologies, for example, required statutory changes in most jurisdictions before they could be adopted for use (Mutula and Mostert, 2010). Developing appropriate government-wide IT legislation policies can provide an adequate framework for eGovernment initiatives to be successful.

Section 2, briefly presents relative law initiatives worldwide. Section 3 illustrates the Greek eGovernment law framework and section 4 presents the results after its implementation. Possible next steps and challenges are proposed in section 5 and finally conclusions are presented in section 6.

2. Background

Establishing eGovernment principles and functions requires a range of new rules, policies, laws and legislative changes to address electronic activities including government to citizen transactions, public sector internal data exchange, electronic signatures, electronic archiving, data ownership issues, freedom of information and data protection. The whole cycle of public sector digital transformation has to be protected and recognized by formalized laws, which protect and secure these kinds of activities or processes. Hence, governments all over the world need to tackle the design and development of this type of eGovernment laws (Ndou, 2004). Recent

(onwards 2010) eGovernment legislative interventions have been reviewed, considering representative cases from different areas worldwide.

In Philippines, eProcurement government process has been settled through an executive order which provides the essential legal guidelines how to conduct electronic business, and how to advertise and post bids or notices in the electronic system. An additional law has been published that give legal protection to electronic documents (Bertot, Jaeger and Grimes, 2010).

New Zealand's government works towards removing policy and legislative barriers (New Zealand Government, 2016) that make it difficult for government to offer online services to customers. Law changes focus on legislative barriers that stop public administration putting services online and supporting fully integrated digital services across government. Law amendments aim to regulate issues such as citizen personal information sharing between public agencies, avoidance of same information re-submission from citizen to multiple agencies and support of information re-use to enable agencies to deliver joined-up services.

On 2013, the Bundestag adopted the Act to promote electronic government (eGovernment Act EGovG) in Germany (European Commission, 2016). Its aim is to facilitate electronic communication with the administration and to enable federal, state and local governments to provide simpler, more user-friendly and efficient eGovernment services. The main provisions from the eGovernment Act are:

- Obligation for the opening of an electronic channel and for the use of a service that makes it possible to exchange legal electronic documents between citizens (De-Mail)
- Principles of electronic filing and scanning of the replacing
- Relief in the provision of electronic evidence and electronic payment in administrative procedures
- Fulfilment of obligations by electronic publication and promulgation of official leaves
- Obligation to document and analyse processes
- Regulation for the supply of machine readable data files by the administration (open data).

European Commission drives the changes in eGovernment legal framework since European states adopt one after the other European directives concerning settlement of eGovernment aspects. Such examples are the Re-use of Public Sector Information Regulations 2015 (European Directive 2013/37/EU of the European Parliament), Electronic Signatures legal framework which introduces a new legal framework for electronic signatures, seals, time stamps and electronic documents (910/2014/EU) (commonly referred as "e-IDAS" Regulation) and the eProcurement Legislation which regulates the use of electronic means in the public procurement process (European Directive 2014/24/EU of the European Parliament).

3. Legislative Framework

3.1 Organizational Structure

In Greek national level the eGovernment strategy designation and policy formulation is responsibility of the Ministry of Interior and Administrative Reconstruction. The Ministry is the main initiator of eGovernment strategies and policies, aiming to develop information technology in the public sector. The Ministry is responsible for setting up the national digital strategy, undertaking the respective initiatives and design activities at national level as well as coordinating involved entities for the implementation of European Union (EU) Digital Strategy. Ministry of Finance, providing electronically a wide range of financial services, and Ministry of Infrastructure, Transport and Networks, providing the network and communication infrastructure, constitute indispensable boosters in the effort of modernizing the public sector operation.

Information Technology and Communications Committee founded in 2011 (Government Gazette 265/A/2014) is responsible to prepare and co-ordinate the plan of actions related to the Digital Agenda implementation and eGovernment.

Regarding the regional level, the Greek state is highly decentralised. The main regional and local government administrative units, the 13 peripheries and the 325 municipalities, are fully self-governed and thus responsible for the administration of eGovernment procedures.

3.2 eGovernment Legislation

3.2.1 Main Framework

The Greek **eGovernment Interoperability Framework (Greek e-GIF)** (Sarantis and Askounis, 2010) institutionalised by the Greek State Law in 2010. The Framework ensures the interoperability of information systems and covers the entire range of rules, standards, specifications and procedures, which apply to all the stages of development and operation in IT, communications and eGovernment projects and are crucial towards the modernisation of the state. Additional objectives include cooperation amongst actors in developing integrated electronic transactions and services for citizens, businesses and other stakeholders, as well as the achievement of economies of scale for actors and the national economy as a whole. The Greek Interoperability Framework is in conformance with the European Interoperability Framework (EIF) and consists of the following building blocks:

- Certification Framework for Public Administration Sites and Portals (Sarantis et al, 2008)

This framework specifies the directions and standards to be followed by the public agencies at central or local levels, when designing, developing and deploying eGovernment portals of the Public Administration and supporting eGovernment services.

- Interoperability and Electronic Services Provisioning Framework

This framework defines the basic principles and the general strategy to be followed by the public agencies, when developing eGovernment Information Systems. It also provides organisational and semantic interoperability guidelines, as well as the technical specifications and communication standards.

- Digital Authentication Framework

This framework aims to support effectively eGovernment at central, regional and local level and contribute to achieving interoperability at the level of information systems, procedures and data. It sets the standards, the procedures and the technologies required for the registration, identification and authentication of the eGovernment services users, including citizens, businesses, public authorities and civil servants. It also aims at creating an integrated and coherent set of policies, regarding digital certificates and public key infrastructures.

The **Law on Electronic Governance**, introduced on 2011, constitutes the institutional framework for eGovernment in public administration for the organisation and simplification of the relationship between the government and citizens/businesses through ICT by defining concepts, setting forth the basic principles, specifying the obligations of public sector bodies for the use and exploitation of new technologies, giving rights to citizens in relation to the processing of personal data and ICT use, regulating issues regarding the storage and transmission of electronic copies, files and protocols and examining issues related to the authentication of user services. It lays emphasis on:

- electronic communication and data exchange between natural/legal entities and the public sector;
- public sector information and the method to be useful in facilitating citizens and businesses;
- the capacity of institutions in taking initiatives in a specific context to facilitate natural/legal entities;
- issues regarding personal data protection and privacy;
- matters such as electronic payments and the automatic search request for files and documents etc.

3.2.2 Individual Regulations

Apart from the Law on Electronic Governance, legislative consolidation includes a set of laws dealing with specific issues, implementing EU Directives aiming at the reuse of different types of Public Sector Information (PSI) and increasing transparency in the activities of the public sector authorities.

Greece has ratified the Aarhus Convention and respective Protocols on **access and reuse to environmental information**, public participation in decision making processes and access to justice with Law 3422/2005.

In conjunction with the introduction of the **electronic procurement (eProcurement) legislation**, targeting the harmonisation with the relevant EU Directives, additional efforts have been undertaken by the Greek Government to revise the Greek public procurement legal framework, consisting of a complex set of laws, presidential decrees and regulations. To this end, the presidential decree 118/2007 simplifies the public procurement procedures, broadens participation to public sector competitions and introduces increased penalties in case of non-compliance to the specific competition terms and conditions.

Law 3882/2010 on the creation of the National Geospatial Information Infrastructure is the law that transposes the INSPIRE Directive. It aims to ensure **equal access to geospatial data** and services for all citizens and public administration. The law is the answer to the need to:

- establish harmonized practices and standards for the collection, production, procurement, management, sharing and distribution of geospatial data and
- comply with Directive 2007/2/EC (INSPIRE), which provides a framework of technical specifications for interoperability to enable the automated sharing of geospatial data in the environment (e.g. areas NATURA 2000) at national and European level.

Since 2010, all public-sector organisations are obliged to upload their decisions on the Internet site <http://diavgeia.gov.gr>, through the **Diavgeia programme (Clarity)** (Sarantis and Psarras, 2011). Henceforth, the decisions of the public entities cannot be implemented if they are not uploaded on the Clarity website, and unless each document is digitally signed and assigned an automatic transaction unique number. Clarity covers all public institutions, regulatory authorities and local government. The Clarity programme introduces the obligation to publish all the decisions on the Internet, with the exception of decisions that contain sensitive personal data and/or information on national security.

On 2014, a law for the **public-sector information reuse and open data** was published. The principle open data by default was legally adopted (Government Gazette 237/A/31 October 2014).

Even though the electronic signatures (eSignatures) Legislation came into effect on 2001, implementing the European Directive 1999/93/EC of 13 December 1999, it is only on 2015 (the law 4325/2015 (Government Gazette 47/A/ 11 May 2015)) when the use of **Electronic Identification and Electronic Certificates**, supported by the process of secure time stamping, introduced in Greek public administration making possible the electronic exchange of public documents.

Table 1: eGovernment legal act and relative infrastructure that supports it

Legal Act	Supporting Infrastructure
eGovernment Interoperability Framework (Greek e-GIF)	National Portal of Public Administration (ERMIS)
eGovernment Law	Citizen Service Centres/TAXISnet/Citizen interactions with public sector
Access and reuse to environmental information	Data.gov.gr
eProcurement legislation	National eProcurement System (ESIDIS)
Equal access to geospatial data	Geoadata.gov.gr
Diavgeia program (Clarity)	Clarity Program Portal
Electronic Identification and Electronic Certificates	'SYZEFXIS' public sector communication network

3.3 Supporting eGovernment Infrastructure

In order to apply eGovernment legislation framework relative supporting infrastructure has been developed (Table 1).

3.3.1 Main eGovernment Infrastructure Components

The **National Portal of Public Administration (ERMIS)**, implemented based on e-GIF standards, provides integrated and secure eGovernment services at all levels, from a central point, thus becoming the benchmark of the National System Authentication. Through the new authentication system, the user, citizen or enterprise, submits a request to the portal with an electronic signature. The request is then identified and initiated by the appropriate agency. By this way, the security, validity and legality of digital transactions are being ensured.

Clarity Program obliges all public officials (Prime Minister, Collective Governmental Bodies, Ministers and Undersecretaries, General and Special Secretaries, Organizations' Presidents etc.) to publish on the web on **Clarity Program Portal** (<http://diavgeia.gov.gr>), decisions, laws and acts in order to be executable. The

particular program acts as deterrent in each effort of public money bickering, in decisions, though legitimate are either not politically equitable or not in accordance to public interest.

Opengov.gr is a portal dedicated to respond to citizens' needs for information, merit and participation in shaping decisions. It offers the maximum possible publicity in all activities of government policy-making and administrative chain, aiming at creating good practices that will be introduced as ways of governance. The portal is designed to serve the principles of transparency, deliberation, collaboration and accountability and includes two initiatives:

- Open calls for the recruitment of public administration officials. Applications for top and mid-level openings are submitted online.
- Electronic deliberation. Almost every piece of draft legislation or even policy initiative by the government, are posted in a blog like platform prior to their submission to parliament. Citizens and organisations can post their comments, suggestions and criticisms article-by-article.

The **Citizen Service Centres** (or 'KEP' in Greek transliteration) are the administrative one stop service centres, where citizens can have access to public service information and to over 1000 standardised administrative procedures. The network of the 'KEP' is also supported by an **online platform - 'eKEP'**. The Citizen Service Centres are linked together by an IP network and use the 'eKEP' platform to file and manage citizens' requests, create a relevant eDirectory, electronically register 'KEP' mail, and monitor the requests' progress all the way through settlement.

"SYZEFXIS" project implements the network of the public administration which connects all the bodies of the public sector, the public administration and local authority with broadband networks for their internal communication (Goulas and Kontogeorga, 2014).

The portal for public procurement is Promitheus (www.promitheus.gov.gr) and more specifically, the **national eProcurement system (ESIDIS)** has been implemented to satisfy the provisions of Law 4155/2013 (Government Gazette 120/A/29-05-2013) as amended by Law 4254/2014 (FEK85/A/07-04-2014). It is administrated by the Division of Information of the General Secretariat of Commerce (SGC) of the Ministry of Development and its use is mandatory for contracts above 60.000 €. In this portal, features include the preparation and notice publication of a competition, the submission of bids, evaluation and contract awards; the aim is to enable contract monitoring, electronic orders and invoicing, as well as electronic payments. In this method, authorities expect to implement new techniques in procurement procedures which include electronic auctions, dynamic purchasing systems and provisions of the Framework Agreement.

The **TAXISnet** system (<http://www.taxisnet.gr>) is one of the first eGovernment applications - it was introduced in 2000 and it is continuously enhanced with financial electronic services with high acceptance by users. It provides services to individual and corporate taxpayers, including electronic submission of income tax forms, personalised electronic notification of the results of the tax return clearance process, electronic issuing of certificates by fax, electronic submission of VAT forms, and payment via banking system services.

Data.gov.gr is the central repository of public data that provides access to the databases of bodies of Greek government. The purpose of data.gov.gr is to increase access to high value, machine readable datasets to provide uniform service cataloguing, indexing, data storage, and search and availability of public sector information, and web services to citizens and other information systems.

Geodata.gov.gr provides open geospatial data and services for Greece, serving as a national open data catalogue, an INSPIRE-conformant Spatial Data Infrastructure, as well as a powerful foundation for enabling value added services from open data.

4. Outcome

The Greek eGovernment Law Framework met most of its objectives acting as a "mobiliser instrument" of public sector mechanism. One significant impact of the law framework is that public organizations and specifically public officials have the institutional consolidation framework to act directly, exchanging between them the essential information, to serve the citizen. Citizen does not have to move the documents from one

public desk to the other. Certainly, progress in the different organizations is uneven, with some authorities performing better than others.

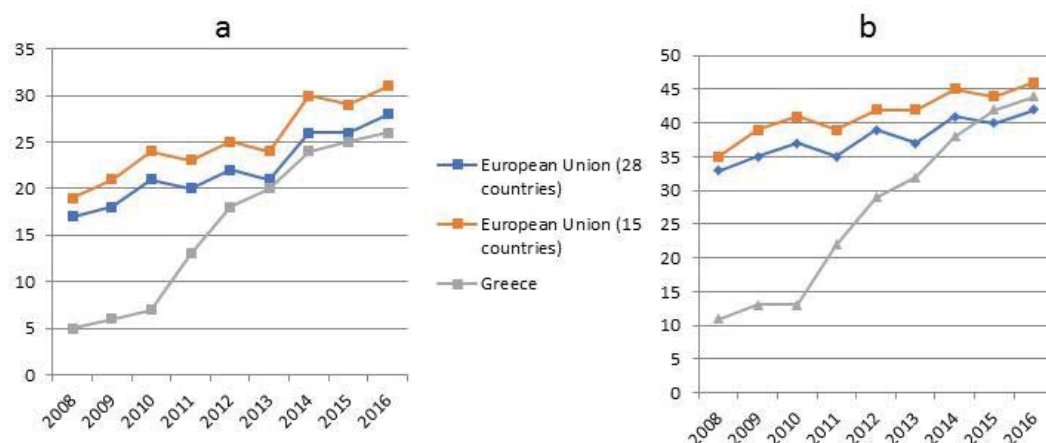


Figure 1: a. Percentage of individuals using the internet (last 12 months), submitting completed forms, for interacting with public authorities from 2008 to 2016. b. Percentage of individuals using the internet (last 12 months) obtaining information from public authorities' web sites from 2008 to 2016. (Eurostat data). European Union (15 countries): Belgium (BE), Denmark (DK), France (FR), Germany (DE), Greece (EL), Ireland (IE), Italy (IT), Luxembourg (LU), Netherlands (NL), Portugal (PT), Spain (ES) and United Kingdom (UK), Austria (AT), Finland (FI) and Sweden (SE)

According to statistical data from Eurostat, collected between 2008 and 2016, the number of Greek citizens that obtain information from public authorities' web sites have been tripled, from 13% to 44% between 2010 and 2016. Similarly, number of citizens that submitted completed forms through internet to public authorities has been almost quadruple, from 7% to 26%, from 2010 to 2016. Regarding public services provision, we can conclude that, after the introduction of eGovernment law, on 2011, there is a convergence of Greek and rest European citizens regarding the electronic form submission processes. There is a sharp increase, after 2010, in citizens' interaction with public organizations through their web sites. The trend shows that citizens are ready to use and they expect from public sector to increase the quantity and the quality of public electronic services provision.

In addition, examination of data from the United Nations (UN) E-Government Surveys (2005-2016) regarding E-Government Development Index (EGDI) and E-Participation Index, shows that after a stable growth from 2005 to 2014 there is a significant deterioration of Greece's ranking, which mainly is explained due to the financial crisis that plagued the country and forced Greek government to re-orientate its priorities (Table 2).

Table 2: Greece ranking in E-Government Development Index (EGDI) and E-Participation Index (UN data)

Year	2016	2014	2012	2010	2008	2005
EGDI Rank	43	34	37	41	44	35
EPART Rank	65	17	45	48	98	57

The application of the Law on Electronic Governance adjusted the principles under which the online public services operate to achieve economies of scale for the benefit of public administration while facilitating the citizens' access to these services. 81 public services to citizens can be handled electronically through the national portal ERMIS. More specifically, after the appropriate technical and institutional amendments, the level of services to citizens such as the issuance of certificates has been improved, without the citizen having to visit the required service in person, either to apply or to receive a certificate.

During the first years of use of the National eProcurement system (ESIDIS) it has been achieved:

- Extensive and compulsory implementation of an electronic process on products and services procurement.
- A full central Electronic Contracts Registry
- Reduction on spending on public procurements
- Reduction in costs and process time

- Improvement in transparency and enforcement of competition
- Improvement of communication lines between interested parties
- Cost reduction in companies participating to competitions

The Single Public Procurement Authority (SPPA) was legally set up in order to coordinate the national strategy on public contracts 'NSFR plan: National Strategic Reference Framework 2007–2013' agreed with the EU, IMF and ECB, overseeing Greek reforms to reduce and control state expenditure on public contracts, to facilitate and encourage the participation of economic bodies involved in public tenders, to develop competition in tendering procedures in accordance with the principles of transparency and equal treatment, and to ensure compliance with the rules and principles of European and national legislation on public procurement.

As of 20th February 2017, over a six-year application of Clarity Program in Greek public administration, there are approximately 23 million of published acts from more than 4.500 public organizations. The contribution of Clarity Program in government transparency, in rationality and in conformation with the common interest decision-making in the public sector, is enormous. Many of the phenomena of corruptness in the past would have not taken place if certain decisions that had problem of legality or rationality had been publicized. The first outcomes show that the program has enhanced public debate of agency activities and increased public understanding. Among the revealed benefits are: increased citizen confidence in the public administration, improved decision making, enhanced public understanding, improved compliance with agency actions, increased agency cooperation with the public, increased debate of agency activities, and reduced “leaks” of agency actions. Most agency officials consulted felt that open decisions forced commissioners to be better prepared, to pay closer attention, and to consider the issues more rigorously (Sarantis and Psarras, 2011).

Citizen Service Centres, complemented by a 24/7/52 administrative information call centre, are well established and accepted from citizens and businesses. The Citizen Service Centre internet portal receives over 9 million visits each month. More than 60000 citizens visit the Citizen Service Centres every day for their transactions with the Government, while since March 2007, Greek enterprises are also capable of making their transactions with the 59 chambers of the country more quickly and easily, through the Citizens Service Centres. The average service time usually does not exceed 7 days.

5. Next steps and possible challenges in the future

The vision of the Greek eGovernment strategy towards 2020 is to use ICT as a catalyst of development and modern governance tool. The aim for Greek Public Administration is to regain the trust of society and become more efficient and productive by providing citizens and businesses user-centric online services that will be constantly upgraded. More specifically the legislation commitments that should be undertaken in the action plan for eGovernment and Open Public Administration are structured in the following directions:

- Encouraging public participation
- Open public data
- Integrity, accountability and transparency
- Interoperability
- Consolidation, No-duplication

In the area of eProcurement there is already a plan that the implementation of the Electronic Contracts Registry will go hand-in-hand with the operation of the Registry of Suppliers, facilitating to a great extent electronic-only filing (and therefore exterminating the need for filing hard copies in the process flow). The implementation of electronic procurement and the simultaneous implementation of a Registry of Suppliers will bring the inevitable modernization and coveted simplification of the award procedures.

Another issue under examination is that public IT managers must consider a large number of restrictive laws and regulations in order to take a decision. For example, one-year budgets affect the potential results of long-term eGovernment initiatives. Additional challenges derive also from the relationships between different levels of governments and the formal checks and balances among the executive, legislative, and judicial branches. Public sector managers cannot change institutionalized rules or practices. However, if there is cooperation and strong consensus among different public organizations it is enough to capture the attention of legislators or other policy makers, some laws can be changed.

Public organisations operate in an institutional environment which is not only laws and regulations, but also norms, actions, or behaviours that people accept as good or take for granted. Greek government authorities often act as independent and autonomous units without considering what other organizations are doing. This type of public sector operation hampers information share and integration across multiple agencies. Furthermore, politics and specific policy agendas affect decisively the results of IT efforts. Even though the essential legal framework exists, public managers have often to confront highly complex and diverse challenges. Success is not only about selecting the right technology and apply the legal framework, but also about managing organizational capabilities, regulatory constraints, and environmental pressures. For eGovernment managers to be successful in their initiatives they must be aware of these challenges and use appropriate strategies to overcome them (Gil-García and Pardo, 2005).

Because users interact with eGovernment systems in entirely different ways than traditional public administration systems, processes and job roles could be impacted. Obtaining necessary data could test the boundaries of existing data sharing policies and might require modifications to existing laws, regulations and agreements, particularly in agencies where security, privacy and other regulations are stringent.

Introduction of eGovernment legislation framework drastically promotes and facilitates citizen's participation and interaction with public administration and the society. Provision and use of personalised information can be effective in motivating citizens to make socially-beneficial choices (e.g. local communities-neighbourhoods issues) and assist in decision making (e.g. hospital or school selection). Furthermore, eGovernment legislation opens up a range of opportunities for civil servants to advance the public interest outside of narrow official mandates and responsibilities, contributing more actively and correcting misperceptions on daily operations. Most of all, eGovernment laws equip individual citizens and civil society organizations with the capability to sift through vast amounts of government data. This enables a new level of open and transparent government, where public authorities make their datasets accessible for public scrutiny and exploitation (Linders, 2012).

eGovernment systems operation have the potential to radically redefine the public administration business model. As such, change management is more critical than ever. It is essential to ensure senior level involvement in the eGovernment law implementation with active participation in defining the aimed vision and roadmap and continue throughout the reengineering process. This includes public sector senior management participation in regular reviews of eGovernment laws and legal acts.

6. Conclusion

The purpose of this study is to describe the implementation progress of eGovernment law reform in Greece and to evaluate the initial results, regarding delivery on its objectives, relevance, coherence and provided added value to society.

The eGovernment Law framework set out to contribute to optimize public sector internal operation and increase the usage and efficiency of eGovernment services. The existence of the established institutional norm referring to digital transformation of public administration is very positive, but this norm remains in some cases still unenforceable, as the essential infrastructure is not present and process and organizational engineering has not been completed yet. The value of eGovernment law framework, however, should not be underestimated for this reason. On the contrary, the legal establishment of the right to exploit information technology is essential for the formulation of governmental policies with regard to public administration modernization.

The roll out of eGovernment services in Greece is currently advancing well, but policies of digital inclusion should play an advanced role in this development, in order to encourage the bridging of the 'digital divide'. There are particular deficits in current policies, which should be taken into consideration, such as the lack of specific programmes for ICT education and the establishing of centres providing internet access at no cost for underprivileged citizens. A concise strategy towards digital inclusion should include the adoption of legislative programmes with this objective and the facilitation of internet access through its inclusion in the universal service.

ICT changes are usually faster than law changes (Bannister and Connolly, 2012). Consequently, those that chase eGovernment developments often become frustrated with the relatively slow rate of change of legal

factors in the change equation. Optimism about technological changes in public administration needs to be tempered with reality. Government is intricate and politics is ubiquitous. If governments can learn to recognize the emerging issues, resulting from targeted eGovernment policies and adjust their own behaviour accordingly, the future of eGovernment will be much more auspicious.

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