

# A European Perspective of E-Government Presence – Where Do We Stand? The EU-10 Case

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**Abstract.** It is widely perceived that the nature of ICT is changing and so is the scale of the resulting economic and societal impact around Europe. Continued and accelerating technological progress, market changes arising from globalization and convergence, and a growing societal acceptance of the new technologies, amount to a step-change in what it is able to be achieved with ICT. This paper tries to identify the current status and the progression achieved so far in EU with regards to the eGovernment area. Specific reference is being made to the EU-10 case, attempting to pinpoint the level of eReadiness progression achieved in recent years. It further detects accomplishments and shortcomings as well as further drivers and barriers shaping the current situation towards the apt EU alignment.

## 1 Introduction

In recent years, the information technology revolution has induced transformational economic and social shifts around the world. New technologies are likely to continue to have a profound impact on the political, economic, social and cultural values of the world in the coming decades. Economic opportunities will continue to abound in marketing and purchase, enabling businesses to increasingly link in global supply chains without care of geographical distance or time zones. Social and cultural distances around the world are likely to shrink even further leading to multi dimensional citizen groups which are more competitive, more democratic and more flexible. To ensure unlimited economic and social frontiers, a huge global information infrastructure is being put into place in many countries for the future. Many governments have tapped new synergies between technology and development to find innovative solutions to economic development and social cohesion. Developing countries have made considerable progress in expanding information technology tools and putting in place physical networks. Indicatively, telephone subscribers account for 49% of the total subscribers in the world, up from 19% in 1990; while, as a whole, own 30 % of the computers today compared to 20% in the early 1990s; and 34% of world users now reside in the developing countries up from a mere 3% in 1992. To provide an enabling environment, governments are investing in policies and programs for building supporting economic, social and regulatory infrastructure which will allow them to take full advantage of the benefits of the impending information society [1], increasing public value. The creation of public value is a broad term that encompasses the various democratic, social, economic, environmental and governance roles of governments.

This paper aims at presenting the current situation in Europe with regards to eGovernment field. It presents the relevant qualitative and quantitative data analysis from various reports, developing a meaningful assessment for the specific area. Furthermore, a special emphasis is placed in the EU-10 progression eReadiness alignment, stating the trajectory factors of eServices development. The main drivers and barriers as well as achievements and shortcomings are overviewed in an attempt to draw relevant and safe conclusions in terms of challenges and implications for the future.

## **2 Major Policies and Priorities for eGovernment Developments**

The global evolution of eGovernment is a reflection of technical developments, competitiveness and efficiency pressures and the need to modernise public administrations. The eGovernment is expected to raise the quality of public services and reduce the costs of their provision, lead to more transparent government. Besides these generally expected outcomes there are special European issues that drive eGovernment, including the promotion of economic growth and employment within the Lisbon process, stimulating innovation and human capital development and meeting such longer-term challenges, as the generally observed aging of European societies, increasing internal and external migration within the EU-25 among others. There are two reasons for the need of European wide eGovernment policy. First, besides local and national issues there are also ones, which should be addressed at European level, including as privacy, security, interoperability and ensuring equal accessibility of services to all citizens. Moreover, the diffusion of technologies, the deepening of the Single Market leads to new cross-border services, which could be developed to support European citizens and businesses. Second, national, regional and local governments can learn from mutual experiences, stimulate the spread of best practices, and foster the development of the best eGovernment systems.

The Manchester Ministerial Declaration [3] approved in November 2005 set four major priorities for policy makers in the area of eGovernment. One of them was the need to have “no citizen left behind inclusion by design”, the second goal was to use ICTs for more effective and efficient government, the third one set by the Declaration was to deliver high impact services reflecting customers’ needs, and finally, the Declaration emphasised the need to have widely available, trusted access to public services across the EU through mutually recognised electronic identifications. This requires that by 2010 European citizens and businesses shall be able to benefit from secure means of electronic identification and Member States will agree on a framework for reference to and where appropriate the use of authenticated electronic documents across the EU. In line with this change the recently adopted i2010 eGovernment Action Plan: Accelerating eGovernment in Europe for the Benefit of All has emphasised five major objectives for eGovernment with specific objectives for 2010, which are crucial for the accelerated expansion of eGovernment [4]. The main priorities of the i2010 have been reflected in the latest Riga Ministerial Declaration [5], based on which it is possible to determine those areas, where the

European policies put an enhanced emphasis and where significant developments should take place in order to meet the above mentioned general goals. These areas are good governance, interoperability, local and regional services, e-Democracy and mobile government.

### 3 Global eGovernment Readiness Status

The evolution of eGovernment is presented with the results from recent worldwide surveys on eGovernment carried out by the United Nations [1]. In eGovernment readiness 22 of the 25 top countries are from the high-income developed economies. Of the 25 countries, 18 are from North America and Europe; 3 from East Asia (Republic of Korea, Singapore and Japan); 2 from Oceania (Australia and New Zealand); 1 from Western Asia (Israel); and 1 from Latin America (Chile) [1, 6, 7]. The United States of America led the 2005 global eGovernment readiness rankings index (0.9062) followed by Denmark (0.9058), Sweden (0.8983) and United Kingdom (0.8777) and the gap in services between Denmark, Sweden and the United Kingdom is further closing the gap in services with the United States (see table 1). The dominance of high and middle-income countries in the top 50 indicates that eGovernment readiness in a country is related to income. As expected high income countries have the resources and the platform of infrastructure to build on the potential of information technologies. In the last decade these countries have invested considerable resources in eGovernment, which is reflected in their higher eReadiness.

**Table 1.** The eGovernment Readiness Index 2005<sup>1</sup>

	<b>Country</b>	<b>Index</b>
<b>1</b>	USA	0.9062
<b>2</b>	Denmark	0.9058
<b>3</b>	Sweden	0.8983
<b>4</b>	United Kingdom	0.8777
<b>5</b>	Finland	0.8231
<b>6</b>	Germany	0.8050
<b>7</b>	Netherlands	0.8021
<b>8</b>	Austria	0.7602
<b>9</b>	Belgium	0.7381
<b>10</b>	Estonia	0.7347

In Europe (see table 2) Denmark (0.9058) continues to lead followed by Sweden (0.8983) and then the United Kingdom (0.8777).

Two things are notable in the performance of Europe. First, countries more or less maintained their relative global rankings with only marginal changes. Second, 32 out of 42 countries fell in the top 50 countries of the world in 2005, which means that except for 8, all countries of Europe have an eGovernment readiness higher than the world average.

<sup>1</sup> Source: UN Global eGovernment Report 2005.

**Table 2.** The eGovernment Readiness Rankings: Europe<sup>2</sup>

	Country	Index 2005	Global Rank in:		Change
			2005	2004	
1	Denmark	0.9058	2	2	0
2	Sweden	0.8983	3	4	1
3	United Kingdom	0.8777	4	3	-1
4	Finland	0.8231	9	9	0
5	Germany	0.8050	11	12	1
6	Netherlands	0.8021	12	11	-1
7	Austria	0.7602	16	17	1
8	Belgium	0.7381	18	16	-2
9	Estonia	0.7347	19	20	1
10	Ireland	0.7251	20	19	-1

### 3.1 Selected Global eGovernment Developments

While there are significant differences in the performance of the individual countries (as reflected by the previous tables), there are some commonly observed trends in the evolution of eGovernment worldwide. These developments may be divided to the following seven major points.

1. EGovernment differences are diminishing between the countries. This is visible from the major international (UN) or European (Cap Gemini) surveys [1, 7].
2. EGovernment providers start to enjoy the savings from their past developments. Governments' initial objectives for their online programs were to provide service improvements and alternate channels of delivery [13].
3. Promoting take-up is still a priority. While there has been a sizeable increase in the usage of eGovernment services, most statistical data confirm that eGovernment currently is far from being used to its full extent.
4. The integration challenge of services is changing. Interest in horizontal integration has been apparent for some time; what is new are decided efforts to integrate vertically—across national, state / regional and local levels of government.
5. Acceptance of the view that traditional “eGovernment” is not citizen-centric. Many starts to share that the traditional way eGovernment was provided is far from being driven by the needs of citizens.
6. Personalization of eGovernment services is emerging. The major driver now is towards providing personalized services through better understanding of the needs of customers [11], utilizing the opportunities offered by the technology and streamlining public services.
7. Changing business models in public administrations. The ultimate goal is total government service transformation, where Internet-based technologies alter the delivery of government services so dramatically - and improve them so radically - that some old service models disappear completely.

<sup>2</sup> Source: UN Global eGovernment Report 2005.

### 3.2 The ICT EU-10 Alignment Progression – Achievements and Shortcomings

Based on various reports and extensive researches conducted in recent years [6, 7, 8, 9, 10], it is possible to determine some general achievements and shortcomings of eGovernment developments in the EU-10, outlining the degree of progression with regards to their alignment with the international spectrum and more specifically with the EU-15.

Initially, one major accomplishment has been the fast increase in the number of public services available online as well as the upgrading of the level of this availability. Similarly to the advanced European countries, the EU-10 focused their policy priorities and scarce resources at the development of the 20 major public services (12 for households and 8 for businesses) listed at IDABC<sup>3</sup> (see Fig. 1). The online sophistication is expected to increase in the EU-10 from 55% to 70% between 2004 and 2006. While the level of online sophistication is still lower than in the EU-15, the gap has declined significantly and the rate of growth in EU-10 has exceeded its rate in EU-28 including also the advanced but non-EU part of Europe (Norway, Iceland). Within that there were some countries, which have been able in recent years to raise their indicators very fast (Latvia, Slovenia, Hungary), which allowed them to improve their relative position in Europe and also worldwide. Besides increasing the number of public services available online, these countries have simultaneously raised the level of online interaction with public authorities providing these services. The average of public services available fully online (meaning either level three or level four of interaction) is expected to increase from 28% in 2004 to 4% by the end of 2006, with 40% and 50% for the same figures respectively in the EU-28. At the same time the average level of interaction in eGovernment has increased in recent years significantly: the average for the EU-10 for the households sector in 2005 was 1.8 and for the business sector 2.6 on the four level scale. In case of the business sector this level is in line with the EU-15, while in case of households the gap is still considerable.

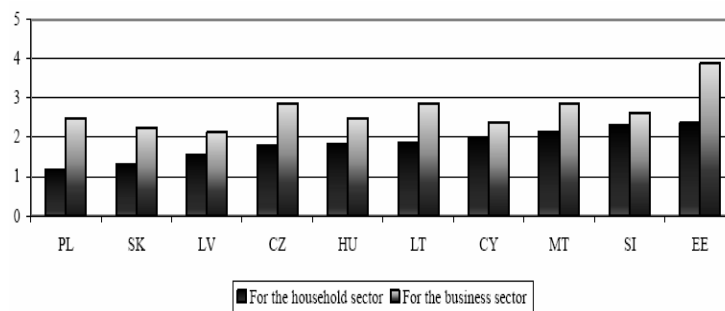


Fig. 1. The Average Level of Provision of eGovernment Services<sup>4</sup>

The increase in number of public services available online has been accompanied in the majority of countries by significant improvements in front offices, leading to more

<sup>3</sup> <http://www.ec.europa.eu/idabc>

<sup>4</sup> Source: EuroStat (2006), IDABC (2006).

user friendly, transparent, in many cases internally integrated services. Public authorities put in the last two years bigger emphasis at developing front offices with the purpose of catching up to the measured indicators of the European Union and improving the scope and quality of public services available online. Closely related to the expansion in the number of online services has been the fast rise and comparably high level of usage of online public services both by the household and corporate sectors (see Fig. 2). While usage depends on various factors (including penetration, affordability and cost of access), the role of content and available eServices should be considered also as an explanatory factor. In case of corporate sector, the percentage of companies interacting with public authorities online was on average by 10 percentage points higher in the EU-10 than in the EU-15 (with 59% and 50% respectively for 2005).

In case of households, the level is still higher in the EU-15 than in the EU-10, but it has been gradually decreasing thanks to fast rise in the EU-10, where it reached 15.5 percentage points of all households in 2005. There are certainly big differences among the EU-10 in both indicators: in 2005 the percentage of households interacting with public authorities online varied between 3.3% (the Czech Republic) and 29% (Estonia), while in the case of the corporate sector the level varied in 2005 between 32%(Latvia) and 69% (Slovenia).

An important achievement has been the presence of relatively concentrated efforts at eGovernment developments compared with other areas of information society. Governments have developed policies at increasing the number and level of online available public services, started to harmonise the services provided by various public institutions, tried to upgrade the level of infrastructure available for public institutions and administrations providing eGovernment services. Moreover, the EU-10 have progressed in establishing the appropriate and supportive legal background for eGovernment. Last but not least an important achievement has been the development of the basic infrastructure needed to provide online public services.

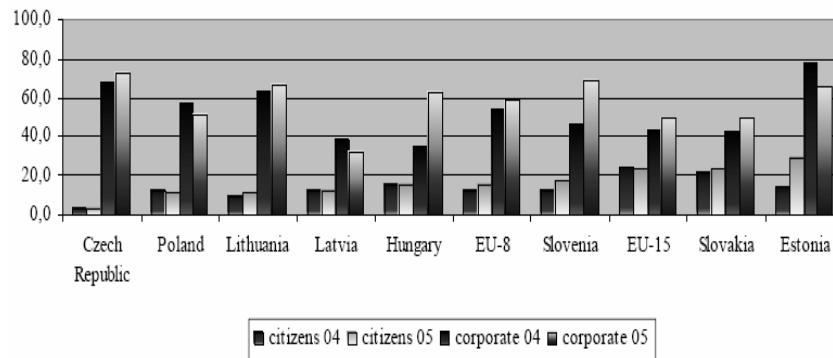


Fig. 2. The Percentage of Citizens and Enterprises Interacting with Authorities On-line<sup>5</sup>

While the EU-10 may present various though different and country specific achievements in eGovernment, there are still several shortcomings that characterise

<sup>5</sup> Source: EuroStat (2006), IDABC (2006).

online public services. First, while there has been a significant increase in the number and level of services provided the scope of public services available online is still limited and not, in many cases, driven by the attention devoted to the needs of users. Closely to this, there is a general trend in the EU-10 that the provision of income generating services has far outpaced the level and extent of the provision of registration / return and permits services. The limited number of services is also due to the very unequal level of development in the provision of services. Furthermore, there is fragmented and scattered development, which is observable at various domains and areas. First, many eServices are not integrated inside the central government and among various general government institutions. Second, the providers of eServices are fragmented, the online development of their services is uncoordinated: they develop different and frequently not interoperable hardware, software applications and different platforms. Further shortcoming of eGovernment in the EU-10 is the quality of services provided by local governments. While there are significant differences among the individual countries, altogether local governments and their institutions lag behind the development of online public services. A serious shortcoming of eGovernment developments in most of EU-10 has been the limited scope of back office reforms and related institutional and organisational changes [14]. Most of the developments have been concentrated at developing and upgrading front offices. Related to the reorganisation of back offices, in EU-8 the opportunity was missed so far to connect the development of eServices with the reform of public sector, which would include redefinition of the role of the state, changes in the institutional and organisational framework in which public services are provided, and reorganisation of the public sector institutions. Eventually, while the achievements in the area of eGovernment include the more focused and concentrated developments compared to other online services, one major shortcoming and future barrier can be the lack of appropriate “owner” of both information society and eGovernment developments. This is mainly due to the scattered policy structure and regular changes and redefinitions of competencies and authorities among the various public institutions and ministries.

#### **4 Overviewed Drivers and Barriers of eGovernment Developments**

The overall development of eGovernment is influenced by the presence of various drivers and barriers. The drivers are those current developments, which support the spread of online public services, while barriers are the factors that generally hinder it. The drivers and barriers depend on the nature of the public sector, the history of public institutions and eGovernment policies, the behaviour of agents and other socio-economic factors, so they are country-specific. However, the analysis of international developments has pointed at several commonly observed drivers and barriers, which affect the evolution of eGovernment in a more universal perspective, and are summarised briefly below (for the scope of this paper some of them may apply only to the EU-10 case):

#### 4.1 Major Drivers

The major drivers of eGovernment are the perceived benefits of these applications. There are various benefits stemming from eGovernment, which are related to the performance of the public sector, quality of the output of public administration, efficiency and transparency of public sector activity. These benefits may be divided to the following groups: (a) *Increasing competitiveness*. eGovernment can provide a major contribution to increasing economic competitiveness at various levels of general government (local, regional, national and also Community level); (b) *Increased efficiency and policy effectiveness*. The changes made possible by eGovernment, such as the improved information supply and service levels, contribute to increase the efficiency of public service delivery, (c) *Reduction of process time and of administrative burdens*. The digitalisation of public services can significantly reduce the time needed to process and deliver a service, therefore saving time for both public administrations and their customers; (d) *Cost reduction*. EGovernment enables public sector to increase its service processing and delivery capabilities, while requiring less time and fewer personnel; (e) *Improved quality of information and improved service level*. Due to the use of ICT, the quality of the information supplied and held in the public administrations' information systems is rising. The direct input of data in electronic format by public services users reduces the number of errors and makes it possible to build quality management information systems; (f) *Increased openness and democratisation*. eGovernment gives citizens greater access to information held by public authorities: (i) Increased participation in the information society, and (ii) increased democratic participation.

#### 4.2 Major Barriers

The major eGovernment barriers are such characteristics of legal, social, technological or institutional context which work against developing eGovernment at the EU level. They may have a double hampering effect on the evolution of eGovernment. On the one hand they may impede demand, by acting as a disincentive or barrier for users to engage with eGovernment services. On the other hand they may impede supply, by acting as a disincentive or barrier for public sector organisations to provide eGovernment services. The major barriers in front of the development of eGovernment are: (a) *Policy priority for the government*. It occurs very frequently that policy makers and government attach low priority to eGovernment in their public policies and resource allocation as other short-term constraints take away the resources and attention of policies; (b) *Lack of appropriate funding for eGovernment*. Another common barrier in front of eGovernment (applied mainly to EU-10) is the lack of appropriate funding available for its development; (c) *presence of digital divide*. The development of information society is accompanied by non-diminishing and frequently increasing level of digital divide (applied mainly to EU-10, due to the substantial variation in experience with ICTs across users, leading to different levels of trust and confidence in eGovernment), which generally characterises countries independently from the level of achieved services; (d) *Lack of appropriate management and coordination skills inside the government*. Government departments fail to agree and implement common procedures and standards to provide shared networked eGovernment services or if they don't coordinate the provision of services



leading either to overlaps or gaps in service provision; (e) *Back office inflexibility*. The success of eGovernment developments crucially hinges on the ability to reform back office procedures and streamline the bureaucratic procedures in the provision of public services; (f) *Lack of trust among the various 'players' of eGovernment service providers*. The major source of conflict stems from the need to collect data on individuals as the basis for providing services and fears of data surveillance or the inappropriate secondary use of personal information in computer databases. Furthermore, the lack of trust is also a barrier in front of the relationship between public administrations, citizens and other ICT actors, which may impede eGovernment developments; (g) *Poor interoperability*. The sources of the current problem are manifold. It happens frequently that the established online public services are difficult to use because of the inability to employ eGovernment services using devices (e.g. mobile phones or old personal computers) most easily accessible by particular users. The users have various preferences and abilities and eGovernment developments sometimes miss the most appropriate opportunity for access. Similar problems may emerge in case there are incompatibilities between newer eGovernment systems and older systems, and failure to agree and implement global standards (e.g. eSignatures identification); and (h) *Legal issues*. There are various legal problems that need to be addressed when developing the eGovernment applications, such as: the administrative laws, which slow down organisational changes needed to shift from the paper based to electronic case handling and project management, the privacy and data protection as well as the poor interoperability between eGovernment systems, due to the lack of standardization in electronic identification and authentication technologies.

## 5 The Impact and Consequences of eGovernment Developments

It is a difficult task to measure the effect of eGovernment developments on the major macroeconomic variables. The difficulties are partly connected to the fact, that ex post assessments require time series data, which are rarely available in this case because of the short time period of eGovernment developments and also due to the difficulties with measuring them. This is one of the major reasons, why direct impact assessments of eGovernment developments have also been rare in the EU-15 countries, which have a longer history of eGovernment developments as compared with the EU-10. Finally, the measurement of the effect of eGovernment developments on the major macroeconomic indicators is complicated by the lack of reliable relationship between the eGovernment developments and macroeconomic variables. While there is a general feeling that eGovernment increases the productivity of public employees and leads to more efficient public sector, the precise determination of this effect is difficult, because: (a) public sector output, and thus productivity is difficult to measure, (b) the effect of eGovernment is difficult to distinguish from the impact of other exogenous forces, and (c) there is a lack of reliable indicators measuring these links. Therefore, at the current level of eGovernment development it is possible only to determine some tentative links between eGovernment developments and their macroeconomic impacts, as stated below (applied to almost all EU-10): (a) Improving productivity and operational efficiency, (b) increasing investment in human capital and life-long learning, (c) cut of administrative burden for people and businesses,

(d) increase of transparency in public sector, (e) improvement of IT skills of administration staff, (f) reduction of decision making time, and (g) Non-economic benefits: increasing democratic participation.

## 6 Discussion

The eGovernment has been proving that it can influence positively public administrations to become more productive and offer citizen services for all, in an open and transparent way. The benefits of eGovernment can go far beyond the early achievements of online public services. It is essential that the public sector adapts its organisation and skills for a user-centred approach in which technology is serving people. There are, however, many barriers and obstacles to overcome and sizeable investments are needed. “Change processes in organisation and culture take time: it can take several years before the combined investment in ICT, organisation and skills deliver the full benefits” [2].

The EU-10 attempt to provide progress in their eGovernment status is a good example to understand based on which barriers the eGovernment process is currently impeded. Even if they are mainly reflected in the reluctance of policy makers to devote significant attention to eGovernment issues, there have been recently two positive changes. First, in recent years governments seem to devote more emphasis in their policies on eGovernment linked to institutional (public sector related ones), legal and regulatory, fiscal and financial, as well as infrastructure and technology measures. Second, as the entry to the European Union demanded, there has been an increased alignment of domestic policies and laws with EU guidelines and emerging opportunity to finance eGovernment related expenditures from Structural Funds.

EU-10, in particular, are called upon to provide political leadership and reinforce long-term commitment at all levels of government, and thereby contribute to providing Europeans with a world-class public administration that makes its full contribution to the Lisbon goals through high quality and innovative public services for all. There are various challenges towards that direction that could be taken into consideration. Part of them is related to the government aspects of eGovernment, namely, the reform of public administrations, streamlining of governments, redefining the scope and role of the public sector. The second area of challenges is associated with the development and usage of ICTs, while the last one with the technological developments brought forward in recent years. Main technological challenges (since they are considered of great importance into the whole progression and future European alignment), that need to be addressed regarding the development of eGovernment services are integration and interoperability (it focuses, in terms of integration, on interoperating of public organisational units, while, in terms of interoperability, the theme covers technical, semantic and organisation levels, as well as standards [15], in order to achieve seamless and joined-up activities which are device or platform independent and able to replace or cope with legacy technologies, architectures and systems), personalized services for all, user needs [12], and trust and security (covers tools, methods, technologies and policies of information assurance, and additionally addresses needs of privacy and identification). Other major challenges identified – while they also show country-specific differences – could be emphasized upon: Reform in the public sector, sustainability of public finances,

evaluating and benchmarking eServices focusing on the overall outcomes of eServices, public value creation, new business models, paper-based versus electronic procedures, security and ethical aspects, and technological challenges to mention but a few.

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