An Evaluation of the Initiatives and the Progress Made on e-government Services in the EU

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Abstract. The European Union (EU) member states have over the past decade been actively developing their e-government services. These services cover a whole range of Public Administration activities aiming to integrate digital interaction between government agencies, government and citizens, as well as government and businesses. This paper provides a review of the criteria used in evaluating e-government services worldwide. Emphasis is given on the progress made by EU States as well as their commitment in meeting European Commission's requirements. Furthermore, the degree of European stakeholder's (citizen, business and organisations) satisfaction is estimated and compared to the availability of these online services.

Keywords: e-government, e- services, e-democracy, e-government indicators, Public Administration.

1 Introduction

Availability of e-Government services in modern societies, with complex day to day activities, is a prerequisite not only for meeting citizen's needs but also in creating the background for the development of knowledge based economies. This observation had lead the European Commission (EC) to very significant decisions for the information society and media, aiming at further enhancing the contribution of Information and Communication Technologies (ICT) to societies and citizens' life on one hand and, on the other, to the global economy as a whole [1].

Ambitious plans of accelerating the whole process of e-Government "*for all*" in the member states of the EU, with so diverse political, social and economic systems, are not easily implemented and, quite often, fail to meet their targets, despite of the available resources both of national and community public expenditure. Furthermore, the economic crisis prevalent in Europe during the time of writing, has led to considerable changes of plans due to severe restrictions in expenditure.

The main aim of the EC decisions towards e-Europe was in reducing bureaucracy among the twenty seven states. Adding to the existing national bureaucratic procedures, bureaucracy imposed by the policies, directives and regulations of Brussels made the task of simplifying, homogenising, integrating and automating

public administration procedures rather more difficult [2], [3]. Indeed, national diversity is a characteristic of plurality and should be encouraged to exist. Nevertheless, many horizontal activities exist in the EU. Examples of difficulties in systems unification and integration appear in taxation, insurance and public health. The present crisis in Economy, starting from Greece and the fears to be spread all over Europe, and the inability of European organisations to deal with this problem is another demonstration of the lack of cohesiveness within the administrative mechanisms of the member states.

In spite of the negative economic climate, there has been some progress towards e-government development and integration recently. Two successive e-Europe Action Plans [4], [5] focusing on "eEurope – an Information Society for All" have be finally integrated by the i2010 e-Government Action Plan [6]. Low uptake of ICT innovations has led the EC to the Digital Agenda for Europe 2020 [7].

In section 2 of this paper, the aims of these plans are described in brief. The whole effort on ICT developments that had a direct effect to the implementation of e-Government services is described in section 3. Section 4 considers existing e-readiness assessments and the indicators for e-government readiness evaluation. Finally, in section 5 the authors propose ideas and views for strengthening the whole effort towards a successful implementation of e-government services satisfying today's citizen needs.

2   Information Society: The European Initiatives

By the end of the 20th century, figures regarding Internet usage in Europe were disappointing and presenting a large disparity among the EU member states [8], particularly so in the south of Europe. In response to this data, a multilingual major project was launched aiming at the PROMotion of Information Society in Europe (PROMISE). Its main objectives over a five year plan were to: (i) increase awareness and appreciation of the public to the degree of influence of the Information Society and its implications to day-to-day practices, (ii) alert societies in making full use of socioeconomic benefits, and (iii) stimulate the role of EU in the global aspect of the Information Society [11].

In promoting Internet usage and combining this with the "people and skills" investment, the Action Plan strongly supported, at a priority level, projects for improvement of networks of scientific research communities. Information Society Technologies (IST) Programme was then launched by the EC [12] within the 5th Framework Programme for Research, Technology Development and Demonstration (FP5).

The EU's ambitious plans were fully documented in an Action Plan [13] published early in the year 2000. The aim was for a knowledge based society that would guarantee dynamic growth of the economy and a full range of services for all European citizens provided by the information society. All these should have been achieved by the year 2010!

The strategy was focusing on a uniform deployment of Internet and web capabilities throughout Europe. Taking into account the existing diversity on the available network infrastructures between the south, central and north Europe, and the

longstanding eminent computer illiteracy in remote areas of Europe, the whole process had to start from scratch.

The e-Europe 2005 Action Plan was launched aiming at encouraging the development of e-services for both the public administrations and private enterprises. It was a rather refocusing programme for research, putting a framework for online services in Europe financed by the 6th Framework and eTEN programmes [9], [10]. It primarily targeted new projects in e-government, e-health, e-inclusion, e-learning and e-trust/security available by the year 2010, taking into account the enlargement of the EU.

Concrete actions for online services in relation to their contributing factors had been also suggested by the EC, with emphasis on the adoption of copyright EU legislation, provision of distance marketing services and financial services (e-taxation, e-money) and jurisdiction on electronic services. Similarly, the EC had specified actions and provisions for secure application of online e-health systems and services.

Despite all efforts, Internet usage in the EU in 2005 had reached a figure nearly 37% well below North America's 68% and well above the 14.6% penetration rate of the world [15]. In response to the above, the i2010 initiative [16] was launched in an effort to implement the new Lisbon strategy towards a sustainable growth of a fully inclusive information society. The i2010 initiative was actually a strategic framework for the information society and media. Digital economy and competiveness should be using ICT as "…a driver of inclusion and quality of life" [5]. As a result, by the year 2010 [16] in improved figures (doubled compared to the year's 2005) of Internet usage [14], and broadband Internet access in Europe to 70% and 60% by the European households and individuals respectively [17].

Concurrently, with the i2010 initiative, the EC issued an Action Plan on e-Government, aiming at increasing and updating the efficiency of public administration services in an effort to comply with the needs of citizens and businesses [6]. In summary, this plan demanded, effective public services, provision of secure services, higher quality of services, reduction of bureaucracy, and cross boarder integration of public services for sustainable citizens' mobility.

In meeting the objectives above, EC's plan contained five priorities: (i) No barriers should exist to any group of citizens in relation to accessibility of online services. By the year 2010 all citizens (eAccessibility and eInclusion major programmes) should enjoy e-Governemt services. (ii) The digital divide should be further eliminated and the member states should reduce administrative burden using innovative e-Government services by the year 2010. (iii) E-Government priority is given to high impact horizontal cross-border services. E-procurement and public contracts are such public services that should be carried out electronically by 2010. (iv) e-Government services should be optimized. Interoperability in identification management, document authentication and e-archiving procedures, and secure systems of mutual recognition of national websites identifiers are a few key enablers of such an improvement. (v) e-Democracy via e-Government services and increased ICT use for significant citizen participation in decision-making and public debates is of significant importance [18].

By the year 2010 the world economic crisis necessitated the need for new measures, raising the "Digital Agenda for Europe". Since there still was a very low degree of adapting ICT innovations in the productivity lines, in public administrations

and day-to-day activities, the EC proposed the Digital Agenda for Europe 2020 [19]. This agenda was an effort to "wider deployment and more effective use of digital technologies" thus improving competiveness, providing better health services, improving environmental conditions, creating more opportunities, spurring innovation and, through all of them, help economic growth. Growth could be achieved by taking steps towards smart (i.e. education, innovation, knowledge and digitization), sustainable (i.e. competiveness and resource efficient production) and inclusive (i.e. skill acquisition, participatory and all in one effort) growth. In order to achieve year's 2020 goals, the EC fosters seven priority areas one of which is the *Digital Agenda for Europe.*This Agenda pursues the availability and connectivity of all Europeans to high speed Internet, on which a Digital Single Market should be based [20], [21], [22].

3   EU e-government Services in Relation to ICT Action Plans

One of the most important sources for evaluating the success of the initiatives discussed in section 2 is "Eurostat". It publishes surveys based upon data gathered from statistical services of the member states with regard: (i) to the availability of online public administration services, (ii) to the connectivity to Internet and its Web services both of businesses and households, (iii) to the state' s network infrastructures, and (iv) to various ad-hoc studies [22].

e-Government service development indices are closely related to and indicate the general ICT impact and developments on information societies. On the other hand it is also evident that e-Government service development indices are implying economic and social progress made. Therefore, the various initiatives taken by the EC aiming to diminish heterogeneity of the ICT services provided to the European citizens throughout Europe, are finally aiming at improving knowledge based economy and quality of life of each member state.

In developing e-government, lots of services have been implemented nationally, aiming at providing tools for saving time and effort in their interaction with public sector procedures to the citizens. In a multi national society's environment as that of the EU, with such a tremendous variety of social, financial and environmental conditions, life of Europeans and particularly those of young age is becoming more demanding and complex. The numbers of young people moving from one State to another, either for studies or looking for jobs or, even if for a better future, are constantly increasing. If to the reasons of increasing complexity of services offered to Europeans the economic crisis is added, then the necessity of improved multilingual e-government services becomes apparent. Of course, the economic crisis that hit many European countries over the last three years has slowed down the efforts and expenditure for the implementation of e-government services, needed by the citizens. As a result, the existing e-government services fail to meet the current needs not only of citizens or business in a Government to Citizen (G2C) or Government to Business (G2B) mode but also the needs of interaction between government organizations, departments and local authorities in a Government to Government (G2G) mode.

4   Evaluation of Implemented e-government Services

In evaluating e-government services, a key question has to do with the *completeness* or the *maturity* of this existing service. And then, a second serious question is raised of "How *sophisticated* the existing e-service is?", immediately followed by the another of "How is sophistication related to usability?".

The confusing questions above are due to the lack of a uniformly used benchmarking model. This lack allows the use of various benchmarks and methodologies with various interpretations based upon different weighting variables and different evaluation criteria of each model. Apart from these variations, other important and not taken into account causes of deficiencies in benchmarking may be due to the negligence's of the interrelationship of an e-government service to the organizational structure and the back-office processes [23], [24].

4.1   E-readiness Assessment

As it has been discussed in previous sections e-readiness of the citizens to use the offered services varies in accordance mainly to social and cultural local developments and idiosyncrasies. E-readiness motivation programmes and projects have been funded and many researchers and international organisations have developed models and indices for assessing worldwide e-readiness in various ICT advances like broadband networking and services, e-business for market economy integration and global digital inclusion [23], [24], [25], [26], [27].

4.2   E-government Readiness

e-Government readiness is basically evaluated taking into account a considerable number of indicators, the most significant of which are: (i) existence of the appropriate ICT infrastructure, (ii) maturity of online services (i.e. transactional services fully covering citizen's needs), and (iii) support in providing advisory and decision making services. The variation of the full set of these indicators is used for assessing e-government readiness for different countries.

Amongst the more coherent systems for estimating e-readiness is that of the UN-DESA. It employs 16 "core" indicators, the first 13 of which cover telecommunication network infrastructure, human capacity development and online presence. Three additional indicators were added later concerning e-Participation, the e-Information, e-Consultation and e-Decision Making indicator [28], [29].

In evaluating state of the art or the progress made on e-readiness in Government services aggregate indices make comparison easier but do not help for diagnostic purposes. Benchmarking necessitates the use of unanimously accepted indicators in analysing e-Government readiness worldwide, while taking into consideration particularities and local conditions of each country [30].

5   Discussion and Conclusions

By the end of the '90s, the EC announced its strategy towards e-Europe. Framework programmes adapted to the information age were launched aiming at transiting Europe to a knowledge based economy enjoying higher growth, job availability and e-services to all citizens. EC's initiatives towards Europe's transition to a knowledge

based economy, known as the "eEurope initiative", have been developed in phases and have been successively dictating new action plans in an effort to realise the potential benefits of the information age, i.e. exploitation of ICT innovations, Internet and Web services for all citizens, public administrations and businesses. Actually, eEurope was a policy framework with no funds but directives of how to use and reallocate public expenditure in order to fulfil directives provided. Thus, the e-Europe 2002 Action Plan focusing to a faster, cheaper and "open to all" Internet was quite impatiently followed by the e-Europe 2005 Action Plan, focussing on broadband technologies and their full use for online services for all citizens and in both the public and private sector. In continuation, the i2010 EC initiative was announced in 2005 promoting ICTs' impact to the societies, the quality of life and the global economy. Well before i2010 initiative's expiration in 2009, the Digital Agenda for Europe 2020 had followed.

Although eEurope framework programmes were rather expressing EU strategy and did not provide extra funds but needed to reallocate public funds from existing expenditure, the EU member states had followed these policies. Also, the EC seemed to have achieved the aims of its first initiative Action Plan to improve Internet connection indices throughout Europe and support the member states in adopting the appropriate legal frameworks in liberalizing communication networks, applying new business practices like e-commerce and enjoying e-government services in rural areas like e-health. Nevertheless, in spite of the money spent and the sophistication of certain e-government services, as it has been shown in the previous sections, the results are not satisfactory in terms of broadness and general applicability. There was a large discrepancy from state to state as far ICT systems adaptation by public administrations is concerned. That is why by its second initiative, the EC tried to encourage quality network infrastructures, development of attractive applications and services and organisational transformations. Another goal of the EC should be on new initiatives to join efforts so that the member states could exchange knowledge and know-how, providing support to each other through more effective joint public administration activities.

Although the EC has continued with persistent plans, framework programmes and horizontal ICT and e-government project support, there are still rural areas in EU with poor network infrastructure, citizens not enjoying or at least taking advantage of e-government services, businesses not been integrated to wider markets and, in general, the EU that is not competitive on the grounds of a knowledge based economy. Moreover, worldwide economic crisis has hit weak economies of the EU and unemployment figures are continuously growing. In parallel, corruption figures, in spite of the well declared transparency and lucidity ICT guaranties, are running high for a number of member states.

In general, the EU Member States have initiated major projects in trying to further develop their e-Government services and, on average, are successfully competing technologically advanced countries of the rest of the world. Nevertheless, there are member states with low performance on the availability of e-Government services. Member states like Greece should focus their effort in redesigning their major national priorities in the e-Government services development. In particular, based on our experience, effort should also be made in the field of attracting citizens and promoting the use of e-Government services. Obviously, countries of low

performance on e-Government services, should give emphasis to firstly improve their general ICT indices. Further efforts are needed to improve their broadband networks, as well as initiate major projects for the elimination of the still existing digital divide. The inequality has reached high scores in rural areas of EU and still creates problems of less privileged EU citizens.

Measurements and evaluation of the progress made of e-Government services in general should be considered very cautiously since respective studies and publications are using different models, indicators, weights, data collection methodologies and target groups. Also, since these services are closely related to many complex and broad governmental fields, a comparison and careful combination of the various benchmark results is necessary prior to an evaluation of the progress made on e-Government services of a particular country.

The complexity, disparity and variability of existing e-Government indicators has lead to the establishment of a partnership task group including leading organisations like ECA (coordinator), ECLAC, ESCAP, ESCWA, ITU, UNCTAD, UNDESA, OECD, EuroSTAT and the World Bank. The objective of this task group is to develop "conceptually clear, methodologically feasible, and statistically sound set of e-government indicators, which also focus on essential features of e-government in the context of development"[31], [32], [33].

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