

Evaluation of NMS eServices Environment within the Context of Four Specific Socio-Economic Domains: Towards the Promotion of a few Best Practices for Improving eInclusion and eParticipation

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Abstract. Europe's Lisbon strategy has reinforced eGovernment as a potential provider of major economic boost by facilitating new and better services for all citizens and companies and reinforcing eDemocracy developments. The NMS are invited to play an active role in elaborating the new Information Society policy issues identified. This paper will explore the e-Readiness of NMS services environment, focusing in the case of Cyprus, in the framework of four specific socio-economic domains identifying policies and technological eServices research implications as regards.

Keywords: NMS, Cyprus, eGovernment, eServices, eDemocracy, Best Practices, Four Specific Socio-Economic Domains

1. Introduction

eGovernment has been on the international agenda for several years as a central element in the eEurope 2005 Action Plan. It is defined as "the use of information and communication technologies in public administrations combined with organizational change and new skills in order to improve public services and democratic processes and strengthen support to public policies" (COM 2003). Its primary concern is the delivery of better quality public services that are user-centric and accessible for all, as well as the increase of the productivity in the public sector, so that services can be provided at a lower cost and less time for a more personal interaction through a 'single point of access' gateway. It also seeks to use new service channels (i.e. and fax, Internet, kiosks, WAP, mobile, digital TV), new infrastructure (multi-platform capabilities) and technologies (i.e. broadband) that will enable transparency, accountability and openness of the public institutions and in that way reinforce the richer and more direct information interaction and retrieval.

eGovernment services have been launched or implemented by most of the European Member States (EMS) and a number of New Member States (NMS) while the rate of initiatives is continually evolving. The notion of eServices could be referred to the direct provision of online services addressed to users (citizens, businesses, non-profit organizations, etc.). It can also refer to the use of Information Communication Technologies (ICT), to support traditional government services where such support improves quality, quantity, outreach and so on (PRISMA 2002). Following the growing user demands and requirements as well as the rapid development of the technological advancements and infrastructure capabilities the development of eServices should not only focus on making the service available on the Internet, but also examine the different delivery platforms. A multi-channel (WAP, MMS, SMS, Web, Satellite etc.) and a multi-device (PC, mobile phones, PDA, tablet PC, Satellite handset etc.) access mix will improve the eInclusion and the access of the services offered, since it will be available anytime, anywhere and anyhow through a single point of access entry (One-stop-Government) (Herbert, & Hagen 2000). Indisputably, this is the vision of an interoperable, transparent and secure continent whereby multi-channel service delivery integration is considered fundamental.

Moreover, one of the strategic themes guiding the whole process is "to struggle against the amplification of the digital divide and the therefore to think 'user interaction' whatever the age, income, education, experience, and the social condition of the citizen" (Europe's Information Society, 2004). Equally important, it is expected to further 'reinforce democratic development in Europe' (Liikanen, E. 2003, ebd.). Amongst others, eGovernment is a promoter of public participation in decision-making and policy, and is considered as the eServices enabler of the eDemocracy Domain and its core Functional Areas of

eInclusion and Access, eParticipation and eInvolvement. eDemocracy is related to those aspects of eGovernment which aim to improve participation of citizens and businesses in democratic decision building by facilitating access to relevant information and by facilitating public discourse (PRISMA 2003).

Based on the latter consideration, in this paper it will be explored the eServices situation of the NMS, placing special emphasis in the case of Cyprus. It will be examined based on four specific socio-economic domains, namely: Work and Skills, the digital SME, Social Inclusion and Regional Development the level of e-Readiness of the Governmental and Business mechanisms to provide adequate eServices complying more with the European policies and strategies. Main emphasis will be given on the policies and research technological implications that could constitute an evaluation guideline for an open and interoperable environment aiming at the better provision of eServices in areas like eParticipation and eInclusion. Eventually, since the implementation of IT systems to enhance active participation of citizens and support the collaboration between actors for consultation, policy- and decision- making purposes is considered critical, the last part of this paper will be dedicated on the presentation of few local and trans-European Best Practices.

The paper is structured in 5 sections. Section 2 presents an eServices progress evaluation of NMS towards the EU alignment. Section 3 gives an overview of eGovernment as an eServices enabler of the eDemocracy domain. Section 4 presents some local trans-European Best Practices promoting eInclusion and eParticipation, and section 5 concludes this paper.

2. NMS eServices Progress Evaluation towards the EU Alignment

The EU has outlined its aims and objectives for the ICT development of the Member States in its eEurope Actions Plans. The eEurope 2005 Action Plan aims to help Member States, and especially NMS, tap the vast potential of an Information Society. Stimulating services, applications and content based on a widely available broadband network infrastructure are regarded as important instruments to achieve these objectives. More specifically an extensive examination of the governmental mechanisms and procedures has to take place in order to identify their degree of e-Readiness for delivering eGovernment services. In particular, the levels of e-Readiness have to be considered are: (a) the *strategic* level (participation for innovation purposes and economic growth), (b) the *technological* level (focus on interoperability, security and open source philosophy), (c) the *management* level (development of data management and knowledge management systems), and (d) the *legal* level (adapting legislation at the national level to promote innovative eServices) (INTELCITIES 2004).

In order to track the progress achieved, a benchmarking framework was developed by the Commission. The benchmarking indicators developed encapsulate the aims and objectives of the eEurope 2005 Action Plan and can be summarized in a hierarchical structure of component indicators. Five categories of indicators have been identified, namely, Internet indicators, modern online public services, a dynamic eBusiness environment, a secure information infrastructure, and broadband (eBusiness Watch 2004). According to these, the degree of alignment of the NMS with the current member states of the European Union has been presented, classifying the countries into four distinct groups according to their performance: Global leaders, EU-15 average / totally aligned, somewhat aligned, and development required. For the scope of this paper, it would be necessary to mention that for Cyprus (as well as Malta), substantially less data was available in order to determine its eEurope 2005 scores. Nevertheless, Cyprus belongs to the third group, ranked in the 21 position scored between 2.5 and 3.5 as compared to the EU-15 average of 4.42 on a seven point scale (INSEAD 2004).

2.1 The Four Specific Socio-Economic Domains Context

Inevitably, the e-Readiness and the alignment indicators mentioned above are taking place in a broader context of a country's environment. This could be distinguished into four domains, namely Work and Skills, the digital SME, Social Inclusion and Regional Development (BEEP 2003). Following, an attempt to identify the importance and average current situation in these four domains with regards to the NMS

countries will take place. Moreover, the objectives, research policies and technological implications will be roughly investigated implicitly suggesting appropriate evaluation guidelines for further actions to be undertaken for the faster adoption of the aforementioned alignment component indicators. For the scope of this paper, a reference in the case of Cyprus will take place occasionally, since it is depicted more or less in the middle of the ranking alignment NMS table mentioned above.

2.1.1 Work and Skills

At present, the vision of the digital revolution affecting the work and skills is directly related to the adoption of the existing advanced innovative technologies as a background for the transformation of work itself in a new knowledge-based economy. The target audience of this domain could be considered the various resource centers, academic institutions, corporate organizations, SMEs, public services and relevant governmental departments. The backbone of digital work is the electronic network that facilitates information exchange, that is an intranet, back up by databases and connections to the outside world, developed in cooperation with the employees to ensure high degrees of usability. To use this network well, employees need to acquire the necessary skills. Moving their activities outside the physical building, tele- or mobile working, as well as eLearning, allow workers to exchange information with ease wherever and whenever. Therefore, the main objectives of this domain include the improvement of skills and competencies, the improvement of work structures and processes, and the improvement of the quality of working life and working environment.

Already, in NMS's labor market, employment structure, job profiles and skills requirements are areas of immense change as digital technologies are introduced and the new economy develops. A more flexible labor market involving telework, mobile work and flexible work generally, offers great potential benefits to employers and employees alike. There are rapid employment shifts towards the service sector as manufacturing becomes more efficient and consumer demand increases rapidly. Job content is becoming more diverse and more rewarding as responsibility for decision-making is delegated to the people actually doing the work, and projects become widespread so that individuals participate in a wide range of activities necessary to complete tasks. Skills too, need to change to keep up with the new economy. Most visible and pressing is the lack of digital literacy among workers. Moreover, work in the knowledge-based economy depends on the acquisition of flexible and changing sets of skills over time, and the required competencies include interpersonal and self-management skills along with problem-solving and decision-making capabilities. Given that both work and skills are changing in the envisioned new Information Society, key questions for policy makers on how to guide these transformations to exploit as fully as possible the positive potential of current and emerging ICT for Europe's e-economy are gradually addressed. Critical answers should be based upon research on digital skills and should focus on the context of computer use. This research could be defined in various guideline levels, such as gaining access, improve basic digital literacy, Information skills, communication skills, and ICT employability. In this regards, the domain of work and skills is very promising as the new technologies are continuously advanced and the way used change day by day.

2.1.2 The Digital SME

The focus of the digital SME domain is on good practices in exploiting the opportunities provided by ICT to improve SME performance. Attention is devoted to SME evolution and to the 'external' factors, related to the digital economy which directly affects SME success and development. This focus will result in addressing any (a) structural changes in SME organization and management related to the impact of digital economy, (b) changes in the competitive scenario that may affect SME evolution, and (c) interventions and policy instruments that have contributed to foster SME adaptation to the digital economy.

eBusiness is often described as the SME's gateway to global business and markets. However, NMS SMEs find the opportunities difficult to grasp. While many SMEs now have a basic Web presence, available indicators suggest the majority are still reluctant to use the internet as a business tool. These

obstacles are mainly focused upon the facts that SMEs lack the crucial technical and management skills needed to capitalize on the new technologies, they also lack access to standardized and fully compatible ICT solutions that stay relatively stable over time, and so run the risk of becoming “locked-into” inappropriate technologies, regulatory frameworks are complex and not attuned to cross-border eBusiness, SMEs are not yet convinced of the appropriateness of eBusiness for their particular circumstances, they have great difficulty finding the time and resources to become informed about and understand the benefits and implications of new technologies and so on (European Commission 2004). On top of the above, in Cyprus, some overviewed characteristics of the eBusiness environment are: Most Websites host product lists, company news and corporate information with only a few sites to provide for online transactions; most SMEs with eBusiness plans have allocated around 1% of their total budget to eBusiness; Cypriot SMEs, especially smaller and more traditional ones are rather pessimistic in assessing their own skills composition and their preparedness to implement eBusiness strategies; most important barriers to implementing eBusiness strategy are thought to be lack of skills and know how; and last but not least, the security of electronic transactions in Cyprus is rated as rather high, whereas technical infrastructure, market structure and the societal environment for eCommerce are judged as rather immature. Nevertheless, within the framework of this domain, particular emphasis will be attached to strengthening the small and medium-sized firms, encouraging research and development, as well as utilizing, to the maximum extent the possibilities opened up by the Information Society.

Specific evaluation guidelines for the improvement of the digital SMEs domain in these countries are focused upon the improvement of networking, the improvement of innovation within an organization, the improvement of the effectiveness of human and knowledge, and the improvement of the effectiveness of B2B and B2C tools.

2.1.3 Social Inclusion

The domain of Social Inclusion addresses the digital divide in Europe, and particularly those dimensions that related to income, age, gender, ethnicity or ability. It is assumed that narrowing the digital divide is an important contribution to the larger objective of achieving sustained social inclusion in the Information Society. The main involvement parties, concerning this domain, are relevant government department and associations, academic institutions and schools, elderly homes, and charitable organizations. The main characteristic of the Information Society is the emergence of an intelligent distributed environment, where access to information in heterogeneous databases and interpersonal communication is concurrently available through a variety of access technologies. To bridge the digital divide more effectively, social inclusion should consider a multi-channel delivery and user-centered design respectively (PRISMA 2002). People from already disadvantaged social groups who cannot afford access to and usage of ICTs are in danger of falling further behind and of becoming excluded from Information Society opportunities. Therefore, counteracting the digital divide can be regarded as a policy instrument and a means of promoting social inclusion. Information Society has the potential to improve the quality of life of citizens, the efficiency of the social and economic organizations, and to reinforce cohesion. However, as with all major technological changes, it can also have disadvantages introducing new barriers, human isolation and dissatisfaction, if the diverse requirements of all potential users are not taken seriously into consideration and if an appropriate connection to computer applications and services is not guaranteed.

One of the major objectives of the Cyprus eGovernment Strategy is the elimination of a possible digital divide. The Cyprus Government committed itself to take a number of actions that will help in “filling the gap”. Such actions are the creation of education centres at schools to train the citizens in using the Internet, the creation of “Citizen Service Centres” to every municipality and community where the citizens will have access to the Internet as well as consultancy on using the eGovernment services. It is also planned the installation of kiosks facilitating the use of eGovernment services and providing information to the citizens (Christodoulou et al. 2004). Emphasis will be given to the promotion of equality between the two sexes, and to measures designed to eliminate the possibility of social exclusion of vulnerable social groups.

NMS evaluation guidelines could be summarized to the improvement of access to information for all, the improvement of the ICT training, the improvement of quality of life for vulnerable groups, and the improvement of awareness raising.

2.1.4 Regional Development

The digital knowledge, knowledge or new economy is dramatically changing the environment in which business and the public sector operates. New ICT is no longer simply a tool to do existing things faster, cheaper or better. ICT is in many ways redefining the economic, social and political landscape by providing new opportunities, posing new threats, changing relationships, opening new implementation methods and producing new types of goods and services. The response to these changes and challenges in Europe varies tremendously from region to region and from locality to locality. The focus of the regional development domain is on good practice in the support and promotion of wealth and welfare as part of an integrated geographical approach, expressed at a local / regional scale involving local / regional actors. It is clear that a spatial re-ordering is currently occurring as decision makers look more closely at the unique characteristics of each location, i.e. in relation to policies, infrastructures, costs, skills, networks, services etc. This tends to make the difference between places more, rather than less, important. Previously, assets like relative location, raw materials and proximity to markets were determining factors in regional prosperity. In the digital economy, on the other hand, knowledge, creative talent and innovation, based upon the local development of human resources and institutional structures, are more important. Thus, location is vital, but now depends much more on how local assets are perceived and developed. It depends on government and enterprises thinking and acting both locally and globally at the same time.

In Cyprus, the economic growth observed in recent decades, and particularly following independence, was not regionally balanced, and has resulted in the creation of regional inequalities, with economic growth concentrated in the urban centers and coastal regions. There has also been a marked degradation trend of certain areas within the urban centers, mostly the traditional centers and areas adjacent to the ceasefire line. For these reasons, the new Development Plan attaches particular emphasis to the implementation of a rational development policy aiming at balanced development of all Cyprus regions and the reinforcement of economic and social cohesion. Within this framework, the development of disadvantaged rural areas will be promoted through the restructuring of the agricultural sector and the encouragement of new economic activities as well as the revitalization of degraded urban areas and the areas adjacent to the ceasefire line.

Evaluation guidelines of this domain are emphasized on the improvement of the territorial identity and structure, the improvement of regional economic development, the improvement of regional social cohesion, and the improvement of regional environmental sustainability (Zigmane 2004).

3. eGovernment as an eServices Enabler for the eDemocracy Domain

In this section, having analyzed previously the current situation and progress with regards to research policy implications, processes and mechanisms in the context of the four domains that consequently affecting the eServices delivery, it would be considered necessary to make a quick reference to the eGovernment as an eServices enabler of the eDemocracy Domain. As it has been described in the introduction, eGovernment is a principle promoter of public participation in decision-making and policy, and is considered as the enabler of the eDemocracy Domain and its core Functional Areas of eInclusion and Access, eParticipation and eInvolvement. eDemocracy could be considered one of the most significant and broad areas of eGovernment. In order for NMS to succeed on a comprehensive EU alignment have to improve their particular governmental mechanisms and processes to provide eServices and online transactions with regards to the specific aforementioned areas.

The main activities of eGovernment should focus upon the improvement of a two way communication between constituents and representatives and better ways for citizens to engage in the legislative

process. eGovernment visions could not be considered complete without giving special attention to the digital democracy. The eDemocracy domain stretches across the spectrum of the democratic process, ranging from voter registration, voting, public opinion polling, communication among elected representatives and their constituencies, universal access to technology, wired legislative bodies, and legislative processes that encourage greater citizen participation (Caldow 2001).

Creating an information society for all is the unquestionable vision of Europe. This encompasses the *eInclusion and Access* of all citizens to information technologies, that is, the act of engaging all people including those with physical and / or socio-economic disabilities in all democratic activities. *eInclusion and Access* activities aim to create an environment of equal opportunities for usage of ICTs in communication with the government and to participate in decision-making processes despite of any social margins. The mission can be accomplished using IT to support communities to recognize and support its members in participating, by providing the appropriate technical environments. To achieve this it must be adopted an inclusive attitude in designing interfaces by enabling the use of people's "first" language, by integration, customization and provision of public access points. Understanding the importance of appropriate language, verbal or visual, letters or signs, is the first step toward recognizing the need in designing interfaces to serve all users. In addition, specification of IT systems promoting (a) active *eParticipation* of citizens and supporting the collaboration between actors for consultation and policy-making purposes, whether acting as citizens (communication with their elected representatives) or on behalf of administrations (communication with parliaments or associations within the political process at all stages), and (b) *eInvolvement* including broader and / or new groups in the democratic process have to be developed and consequently implemented (INTELCITIES 2004).

4. Best Practices in Cyprus Promoting eDemocracy

There are many interpretation and approaches regarding the definition of a best practice and often there is the argument whether and how a practice could be referred to as a "best" or "good" (Christodoulou et al. 2004). A convergent approach could consider that the concept of "best practice" is closely related to the concept of Benchmarking. Best practices refer to how a certain organization or case achieves the highest indicator score(s) during benchmarking, and thus becomes the "benchmark" for others. Depending on the type of benchmarking used, the "best practice" can be i.e. a method, a tool, an organization, a system or a technology (i.e. everything used to achieve the excellent performance seen). Best practice examples should be described in a way enabling transference to other situations where users have similar objectives and should facilitate learning by them.

Serious attempts have been undertaken in Cyprus in developing systems with regards to the various governmental domains. The main concern encountered is the satisfaction of all the predetermined characteristics that could promote them not only to best but to Trans-European practices as well, and henceforth facilitating broadly effective services and online transactions communication and delivery. Amongst others, in the area of eHealth there have been developed DITIS (finalist on the EU Ministerial eHealth 2003 Conference), AMBULANCE and EMERGENCY (Christodoulou et al. 2004), and TELEGYN. In the area of eDemocracy, there are systems still in the designing and development process and others already accredited. The former include the Custom and Excise Systems – Theseas, the TaxisNet system, the Candidate Placement system, the Euro-Mediterranean Information System (on the know-how in the Water sector), the Social Security system, the Civil Registration system, the Road Transport System, the e-University system, the Health Integrated System and the use of Electronic Signature and Citizen Card system; while the latter include the ACCELERATE system (Extension of Library and information services to blind and visually impaired users), the ODYSSEUS system (the implementation of the first pilot program on distance learning in elementary schools of Cyprus), and the OIKADE system (the development of a meeting field for the children of all Geek Communities around the world).

For the scope of this paper, two of them are briefly outlined below. Both practices (ACCELERATE, and ODYSSEUS) are referred to the Functional Area of *eInclusion and Access*.

4.1 ACCELARATE

This system referred to a University of Cyprus Library which participated in a European project (TESTLAB) aiming to the extension of its services to blind users. According to conclusions of the surveys initially carried out, there were no particular infrastructures in any Library in Cyprus permitting the offering of Information services to blind and visually impaired people. More specifically, in one case a blind student that tried to study in the University of Cyprus was forced to quit her studies because of the absolute lack of the appropriate equipment and services for blind people in the Library. As a result of that situation Cypriot blind students were not encouraged to continue their studies in higher education in Cyprus.

The particular ICT system succeeded the extension of the Library services providing not only the amount of digital information locally available but the one found on the internet as well. Henceforth, it has been offered equal opportunities for studying to the blind and visually impaired people once they have been facilitated with the potential to directly access any requested information sources. The particular ICT extension has been achieved with the installation of the adaptive workstations, the setup of information services and the creation of alternative (digital) information content accessible and readable by the blind. The results were really impressive once the accessibility of the blind people to the Higher education is now a sustainable fact.

4.2 ODYSSEUS

One of the most important priorities of the developed countries throughout the world is to help their citizens to come up to the needs of the new digital era. As part of this endeavor, the role of Cyprus educational system is of utmost importance. The preparation of tomorrow's citizens is incumbent on the elementary schools, which ought to include the new technological applications in the educational process. The integration of new technologies in the sensitive area of a school classroom is not an easy task. The use of computers and educational multimedia, the establishment of network infrastructures and the provision of videoconference systems ensure the technological aspect of this endeavor. At the same time, it is necessary to develop a pedagogic model, which will constitute the necessary theoretical basis and will mark out the framework where the new educational technologies will be contained.

As part of this framework, the Ministry of Education and Culture of Cyprus and the Department of Computer Science of the University of Cyprus, implemented the first system on distance learning via teleconferencing, called ODYSSEUS. Main technologies used include ISDN lines, dial up Internet connection, television, camera, computers, and telephone appliances.

The output results were assessed based on the evaluation of the technological and human resources (the teachers, the students and the technological infrastructure of schools); the evaluation of learning effectiveness of program ODYSSEUS; and the presentation of student descriptions of the courses in the near future, comparing the conventional with the distance-learning model. The concluded lessons drawn were really effective and innovative supporting in many cases, during the evaluation process, the opinion that the new learning environment with the innovative methodologies and learning processes could easily constitute the combination of the new educational technologies and traditional pedagogic approaches, with indisputable the teacher's technical support since it is proved a critical factor for the smooth flow of the teleconferencing learning.

5. Conclusion

Since May 1994, the EU "family" has been significantly enlarged with the accession of the NMS. This paper has been investigated the degree of e-Readiness of these countries with regards to eGovernment, placing special emphasis occasionally in the case of Cyprus. It has been clearly stated in many communications of the European Commission, the New Information Society ICT insights and characteristics one country has to encompass in its internal government and business mechanisms and

procedures in order to deliver better quality Trans-European (eventually) eServices to the involved parties (citizen, government, business). Henceforth, a NMS progress examination based in the framework of four specific socio-economic domains, namely Work and Skills, the digital SMEs, Social Inclusion, and Regional Domain, identifying challenges and opportunities as well as proposing status evaluation guidelines that could enhance the development process towards the EU Alignment has been taken place. Specific governmental activities have also been outlined with regards to future potential improvement of eServices effectiveness and efficiency in the broader European context. Moreover, since eGovernment is considered the principle enabler of eDemocracy and its core Functional Areas of eInclusion and Access, eParticipation, and eInvolvement, a reference to its peculiarities and distinctive considerations has been made in the last two sections, implicitly outlining specific qualities and strategic characteristics that have to be encompassed by the NMS for a more consistent, prosperous, and sustainable competitive co-existence. Eventually, a number of best practices have been presented to re-enforce the knowledge and understanding of the ICT applications in the specific domain.

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