E-government in Algeria in shade of Networked Readiness Index : requirements, challenges , and effects.

Salim Gat[1], Abd el wafi Boulouiz [2]

1University mohamed kheider biskra(algeria). salim.gat@univ-biskra.dz
[2] University center naama(algeria) . boulouiz@cuniv-naama.dz

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Abstract :
This study aims to know E-government in algeria in shade of Networked Readiness Index between requirements , challenges , and effects. To catch up with the backlog in the field, an "e-Algeria 2013" plan was launched in 2009 to integrate into the information society and the digital economy.
The study concloded that the Algeria made a litle improvement in the digitization of its management and its administration, that what we can see in its ranking in in shade of Networked Readiness Index, where its ranked in the 117 out of a total of 139 countries, and this is at a rate of 3.2 , despite the fact that there ara a lot of challenges.
Keywords : E-government Networked Readiness Index - Digital citizenship
JELClassificationCodes: M0, M1

1. Introduction :

E-government has been employed to mean everything from ‘online government services’’ to ‘exchange of information and services electronically with citizens, businesses, and other arms of government’. Traditionally, e-government has been considered as the use of ICTs for improving the efficiency of government agencies and providing government services online. Later, the framework of e-government has broadened to include use of ICT by government for conducting a wide range of interactions with citizens and businesses as well as open Government-to-Government (G2G) involves sharing data and conducting

***Corresponding author**: Fullname, **e-mail:**authorC@mail.com*

electronic exchanges between governmental actors. This involves both intra- and inter-agency exchanges at the national level, as well as exchanges between the national, provincial, and local levels.

Government-to-Government (G2G) involves sharing data and conducting electronic exchanges between governmental actors. This involves both intra- and inter-agency exchanges at the national level, as well as exchanges between the national, provincial, and local levels. Government-to-Business (G2B) involves business-specific transactions (e.g. payments, sale and purchase of goods and services) as well as provision on line of business-focussed services. Government-to-Consumer / Citizen (G2C) involves initiatives designed to facilitate people's interaction with government as consumers of public services and as citizens. This includes interactions related to delivery of public services as well as to participation in the consultation and decision-making process.

2. - E-government and the public sector :

E-government can thus be defined as the use of ICTs to more effectively and efficiently deliver government services to citizens and businesses. It is the application of ICT in government operations, achieving public ends by digital means. The underlying principle of e-government, supported by an effective e-governance institutional framework, is to improve the internal workings of the public sector by reducing financial costs and transaction times so as to better integrate work flows and processes and enable effective resource utilization across the various public sector agencies aiming for sustainable solutions. Through innovation and e-government, governments around the world can be more efficient, provide better services, respond to the demands of citizens for transparency and accountability, be more inclusive and thus restore the trust of citizens in their governments.

2.1 New Public Management and the modernization of public administration

The public administration, in the last twenty years, has undergone profound changes linked to the altered socio-economic context of modern post-industrial societies. Previously, public organizations had an organizational and managerial structure on the lines of a bureaucratic model and did not possess the necessary capacity to deal with the new needs of the citizens. The rising complexity, the lack
of financial resources and European politico-economic integration required a process of modernization in public administration.

This process has affected:

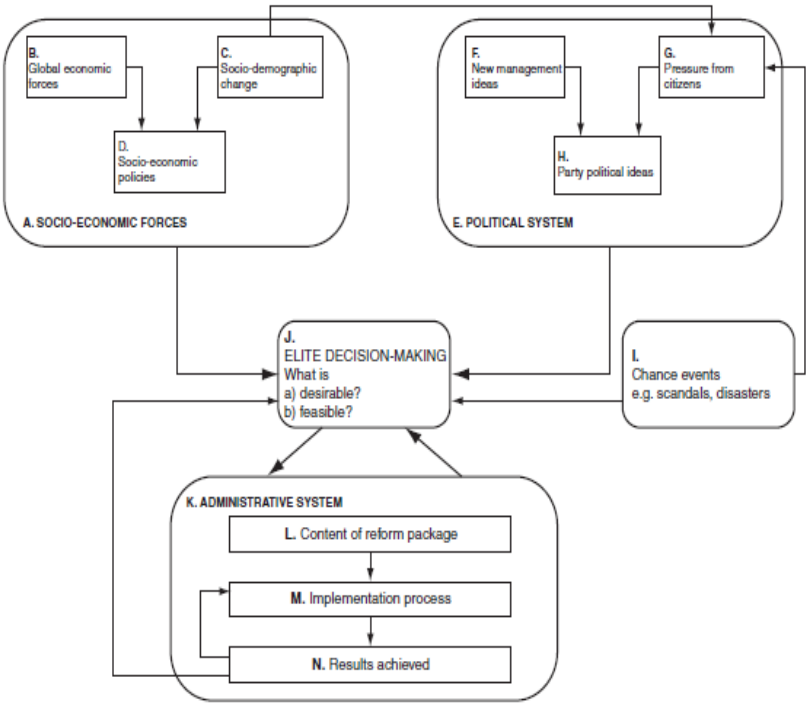
a) the managerial perspective, taking public systems in the direction of new principles and instruments to be used in the process of organizational, managerial and information system innovation.

b) the political perspective, leading the public sector towards new forms of legitimization; and

c) the juridical perspective, prompting the public sector to acknowledge the socialeconomic changes in society by introducing a new legal framework to suit the new conditions.

The above-mentioned reform process was especially based on the principles of New Public Management. (CALOGERO, 2010, p. 31)

Figure 01 : A model of public management reform :



Source :Christopher Pollitt . Geert Bouckaert . Public Management Reform : A Comparative Analysis—New Public Management, Governance, and the Neo-Weberian State. Third Edition . Oxford University Press . 2011. New York P :33.

With the advantage of hindsight, we can see that this began to change in some countries in the late 1960s and early 1970s, and then began to affect many more from the late 1970s/ early 1980s. The first wave—which was principally concerned with more rational strategic
policymaking and evaluation—took place mainly in the USA, the UK, and France. It coincided with, and was part of, a period of 'high modernism' when rapid advances in science and technology, combined with a huge growth in the university-based study of the social sciences, seemed to hold out the promise of a more rational 'designed' set of public policies and institutions. (Christopher & Geert, 2011., p. 6)

2.2 Integrating e-government in the public sector :

Countries recognise that e-government has become a unique and powerful tool for governments. It has contributed to making public administration significantly more efficient and effective. It has, in its own right, forced governments into rethinking organisations, responsibilities, business processes, and collaborative and co-operative arrangements within and across levels of government – and also forced
governments to take a whole-of-public-sector view of their service provision to
citizens and businesses.

It is nevertheless still a challenge and it will remain a challenge in the coming years to ensure that the main lessons learned, are taken onboard and implemented:

- ***E-Government is a powerful generic tool for overall policy implementation:*** E-Government has proven to be a powerful generic and strategic tool for public sector transformation, and an unavoidable support for broad policy implementation in almost all areas of society.
- ***E-Government is improving efficiency and effectiveness of government functions and is driving standardisation:*** EGovernment has proven to be a forceful driver for sharing of resources (*e.g.* information and data, business process, and services) and for standardising organisational, legal, and technical
frameworks.
- ***The digital divide is still a significant challenge for countries:*** The challenges of the digital divide are still present in many countries.

2.3 Future challenges for E-government:

E-government is a big opportunity to provide services to all citizens, though there
are some challenging issues (IDOUGHI . & Djedd, 2013, pp. 94-95)

• **Privacy issues:**

The privacy is a problem in implementing e-government services, citizens will be concerned on the privacy of their life, the security and confidentiality of their provided information in order to obtain the government services.

• **Security issues:**

Security is an absolute requirement especially in payment transactions such as taxes, …

• **Economical issues:**

Costs of implementation operational and maintenance must be low so a good cost and a benefit ratio can be guaranteed

• **Acceptance issues:**

Making public sector accept the e-government services is quit a hard task because of the required changes in its organizational structure. Unless citizens know what is available from the e-government, they will not likely seek to use the e-government, defeating the purpose of the development of e-government information and services.

• **Required technologies issue:**

Government must take on consideration the case where a citizen is unable to use the technologies that e-government relies upon, for lack of education or limited ability or resources.

Presenting useful information and services: the accessibility of significant content is a vital concern. The content presented on e-government websites must be more than just a large amount of information.

• **Language and communication issues:**

In Algeria we have more than one spoken/written language by populace, effective e-government requires the use of a common language or languages in which citizens are comfortable communicating.

• **Geographical historical issues:**

The study of Algerian Geography and it's society history prove that the application of successful e-government models such as the south Korean one is difficult with uncertain results.

3. - Enabling Digital Citizenship :

3.1 Digital citizenship :

As the pervasive influence of the internet continues to make itself felt, how can governments turn growing numbers of digital citizens (those enabled by the web) into a populace committed to active participation in the delivery of public services, enabled by digital channels? This 'citizenship' implies a readiness to get involved; to take a bigger role in helping government 'do more with less' by using the web for greater self service and interaction with government agencies. Greater digital citizenship demands that governments relinquish their hold on service delivery and use the internet as a means both to reduce costs and to improve levels of service. (Andy & Oliver, 2011, p. 97)

3.2 Digital citizenship and its requirements :

Today's web-enabled digital citizens are not just adept at using 'self service' to solve their needs, but positively revel in their freedom and the power to find and decide upon exactly what they want. Furthermore, they are increasingly known for being both contributors to and consumers of webbased services. The challenge for government is how to turn growing numbers of digital citizens (those enabled by the web) into a populace committed to active participation in the delivery of public services, enabled by digital channels. This 'citizenship' implies a readiness to get involved; to take a bigger role in helping government 'do more with less' by using the web for greater self service and interaction with government agencies. Greater digital citizenship demands that governments relinquish their hold on service delivery and use the internet as a means both to reduce costs and to improve levels of service.

Until now, the standard approach has been one of e-Government, a term that tends to define the provision of access to existing systems and processes from the web but doesn't embrace the potential for digital citizenship.

E-Government has typically adopted a ‘done to’ and not a ‘done with’ relationship between
government and citizens; an echo of the past in terms of the capabilities and delivery methods, rather than a grasping of the current and future capabilities of interactive engagement. The question is what are those capabilities and what can government learn from understanding not only the hard facts, but also the softer cultural aspects of change that are moving across the population.

3.3 Expanding network 4G, backed by expanding subscribership in Algeria :

Introduced to the market in 2016, 4G services have enjoyed significant expansion in Algeria, growing by 573% in 2017. As market competition drove down prices, 4G has been adopted by 9.87m subscribers as of end-2017, up from 1.46m subscribers a year earlier, according to the Post and Telecommunications Regulatory Authority, which became the Regulatory Authority of Posts and Electronic Communications (Autorité de Régulation de la Poste et des Communications Electroniques, ARPCE) in July 2018. About one in three mobile internet users are currently on the 4G network, with this expected to increase further in 2019. The boom is a natural process, as 3G subscribers equipped with compatible smartphones have tended to migrate to 4G packages. The reality of the 4 G in Algeria can be known through:

SHIFT TO DATA:

Mobile data revenue is making up an increasing share of operators’ income. Djezzy, for example, saw a surge in data services, increasing from AD6bn (€43.6m) to AD10.8bn (€78.4m), an 80.7% year-on-year increase in the first six months of 2018. However, as is the norm in the sector, the shift in consumption habits has continued to erode operators’ revenues as the cost of data decreases. “In 2013, 1 GB of data used to cost AD800 (€5.81) to AD1000 (€7.26). Five years later, the price hovers around AD60 (€0.44),” Salim Tamani, head of PR and media at Djezzy, told OBG.

NATIONAL COVERAGE:

Mobile network operators have made a pronounced effort to increase users' access to the internet. The three major operators – Ooredoo, Djezzy and Mobilis – invested AD1.2bn (€9m) in infrastructure development from 2001 to 2017. In the first six months of 2018 Ooredoo invested AD7.8bn (€56.6m) into the reinforcement, expansion and modernisation of its network, while Djezzy invested some AD4.9bn (€35.6m).

In September 2016, after the ARPCE delivered licences for the deployment of 4G, a roadmap to its

rollout was adopted. By September 2018 Ooredoo covered the country's 48 *wilayas* (provinces); Djezzy

had networks in 28 wilayas; and Mobilis in 32.

However, these figures hide disparities in population coverage of each of the operators. As Ooredoo

has maintained a presence in each wilaya, Djezzy and Mobilis have established coverage within selected

wilayas, but with higher coverage rates. In Algiers, for example, Ooredoo covers 15% of the population, while Djezzy and Mobilis cover 40% and 90%, respectively.

GLOBAL RANKING:

In the International Telecommunication Union's "ICT Development Index 2017", Algeria jumped four places from 2016 to reach 102nd out of 176 countries, in large part due to the expansion of its network. The index indicated improved performance in all three categories: access, use and skills. Furthermore, Algeria's average international internet bandwidth per user increased by 33% in 2017 to reach 40 Mbps. Comparatively, international bandwidth per user stood at 31.2 Mbps in Tunisia (99th) and 25.7 Mbps in Morocco (100th) that same year.

UNIVERSAL SERVICE:

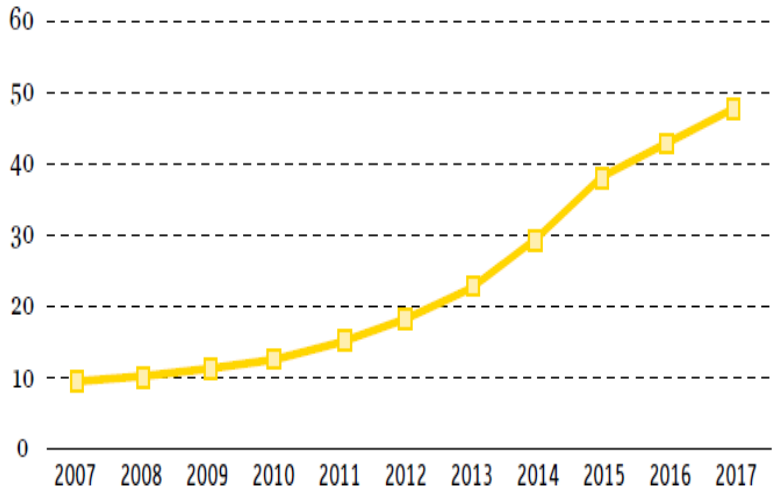
The new law regulating telecoms, Law No. 18-04, adopted in June 2018, draws general guidelines on the development of the infrastructure and includes measures to support connectivity to the network. The law reiterates the principle of universal service by establishing a new fund for the sector,

used to connect 560 white zones that are not profitable for network operators, including 193 zones in the south that have populations under 500 people. Furthermore, the unbundling of the network is expected to increase competition in the sector with the sharing of infrastructure, potentially attracting virtual network and mobile operators to the market.

As international rankings have indicated, Algeria continues to improve and expand its network connectivity,

despite its large size and dispersed population. Efforts should continue to focus on growing local content, shifting international bandwidth to a national one and reducing the cost of the internet.

Figure N° 2: Individuals using the internet , 2007 – 2017 (%):



source :

Oxford Business Group. The Report of Algeria. 2018. P :07. Availeble at : www.oxfordbusinessgroup.com/country/algeria

4. Digital Transformation in Business area and its effects in Algeria economy:

4.1 Digital Transformation for Business Model Innovation :

Although some authors argue that the digital transformation of business models is still poorly
understood , there has been some research aimed at better understanding the interaction between digital transformation and business model innovation , the impact of digitalization on BMI , and how business models can be digitally transformed . What is commonly agreed upon is the critical role that digital technologies play in the digitalization of the business model, o_ering new opportunities for organizations to develop a more varied spectrum of business models .

Extant research states that the digital transformation of business models is based on a sequential process of activities and decisions, which may a_ect a single or multiple business model dimensions, or even the whole business model . It has also been established that business models originate from the digital business strategy that digitalization influences the entire business model , and that it is increasingly important to include the perspective of digitalization within the business model design process . Given that digital business models determine a di_erent rationale , and in light of digital technologies' increasing incorporation into the firm's operations, new ways to explain the business model will be needed presenting multiple challenges for managers in traditional industries. Some research has identified the barriers and enablers of digital business model transformation, establishing that the dominant rationale is that of most significant barriers for the transformation of the business model from traditional to digital HEIs, like any other kind of organization, are also a_ected by the inertia of the dominant rationale of their current BM, representing a barrier to leverage opportunities from BMI such as the ones derived from DT.

Although some research has been carried out on the potential enablers of the DT of business

models, and some frameworks for how to successfully execute this process have been provided the general reality is that the challenges or tensions involved in digital transformation and their impact on business model innovation have been little explored. (Albert & andOthers, .2020, p. 3)

4.2 Digitalisation and its effects on Algerian economy:

Results from recent Canadian studies suggest that technological change is contributing to the declining share of national income paid to the labor force .

Increasing the digital divide in a precise way is a real threat that negatively affects the economic environment, so digitization in general causes financial influence combined with "inflation": According to researchers (like Mendes); digitization could lead to increased productivity and growth in potential output.

All other things being equal, a higher potential growth rate of growth must be combined with a rise in the neutral interest rate for the inflation target to be reached.

In addition, the Algeria's commitment in the digitization of the administration encourages us to reflect on the direction for the Algerian monetary policy in the context where the economy becomes more focused on digital technologies and services. Indeed, digital technologies influence and transform the functioning of Algerian telecommunications companies by facilitating tasks that are highly dependent on connectivity, use of information, forecasts and
collaboration.

It should be noted in this regard, the opportunities of Internet market in Algeria will get rich the new structure of the economy, and this when the productivity gains at the level of the Algerian economy could be realized only at the stage of deployment, a stage where the new technologies and the new operational processes are omnipresent.

So to minimize the threats; and that tools (statistics, taxation, competition and industrial relations policies) and related institutions that manage the economy are current and able to fulfil their mandate. (Nassima, 2019., p. 266)

Since 2001, The Global Information Technology Report series published by the World Economic Forum in partnership with INSEAD and Cornell University has measured the drivers of the ICT revolution globally, using the Networked Readiness Index (NRI). The Index has evolved over time and currently assesses the state of networked readiness using 53 individual indicators. For each of the 139 economies covered, it allows the identification of areas of priority to more fully leverage ICTs for socioeconomic development.

Four important messages emerge from the Report this year. First, innovation is increasingly based on digital technologies and business models, which can drive economic and social gains from ICTs if channelled in a smart way. Second, the way businesses adopt ICTs is key for leveraging them for development, so encouraging businesses to fully embrace the powers of digital technologies should be a priority of governments. Third, both the private sector and governments need to step up efforts to invest in innovative digital solutions to drive social impact. Last but not least, a sustainable digital economy will depend on quickly evolving governance frameworks that allow societies to anticipate and shape the impact of emerging technologies and react quickly to changing circumstances.

The Report is part of the World Economic Forum's wider efforts to address digital technology questions through its System Initiative on the Digital Economy and Society. The aim of this initiative is to help shape the Internet as a true and open platform and as a driver of economic development and social progress.

5. Algeria in Networked Readiness Index :

5.1 Concept of Networked Readiness Index :

Since 2001, The Global Information Technology Report series published by the World Economic Forum in partnership with INSEAD and Cornell University has measured the drivers of the ICT revolution globally, using the Networked Readiness Index (NRI). The Index has evolved over time and currently assesses the state of networked readiness using 53 individual indicators. For each of the 139 economies covered, it allows the

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Against this background, the Report is meant to be a call for action. Policymakers must work with other stakeholders to swiftly adopt holistic long-term strategies for ICT development and lead in adapting governance and leadership behaviors to ensure that ICTs deliver maximum benefits. Under the theme "Innovating in the Digital Economy," The Global Information Technology Report 2016 highlights striking innovation patterns in the NRI data that can help point the way for policy and investment priorities.

5.2 Pillars of The Networked Readiness Index :

The framework translates into the NRI, a composite indicator made up of four main categories (subindexes), 10 subcategories (pillars), and 53 individual indicators distributed across the different pillars: (World Economic Forum, 2016, pp. V- IX.)

1. Environment subindex

a. Political and regulatory environment (9 indicators)

b. Business and innovation environment (9 indicators)

2. Readiness subindex

a. Infrastructure (4 indicators)
b. Affordability (3 indicators)
c. Skills (4 indicators)

3. Usage subindex

a. Individual usage (7 indicators)
b. Business usage (6 indicators)
c. Government usage (3 indicators)

4. Impact subindex

a. Economic impacts (4 indicators)
b. Social impacts (4 indicators)

5.3 Algeria in Networked Readiness Index :

The following table shows the evaluation of Algeria according to the indicators and sub-components of the Networked Readiness Index, as well as its comparison with the average countries in the world in the following figure.

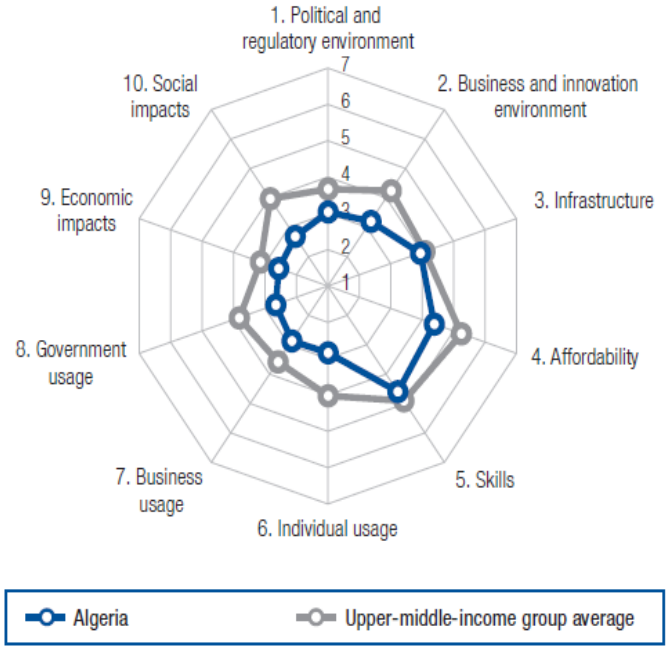
table N° 1: Algeria in Networked Readiness Index 2016:

Networked Readiness Index	Rank (out of 139)	Value (1–7)
Global Networked Readiness Index	117	3.2
Networked Readiness Index 2015 (out of 143)	120	3.1
Networked Readiness Index 2014 (out of 148)	129	3.0
Networked Readiness Index 2013 (out of 144)	131	2.8
Environment subindex	131	3.1
Political and regulatory environment	123	3.0
Business and innovation environment	133	3.2
Readiness subindex	95	4.3
Infrastructure	80	3.9
Affordability	99	4.4
Skills	89	4.6
Usage subindex	125	2.8
Government usage	103	2.8
Business usage	133	2.9
Individual usage	130	2.7
Impact subindex	129	2.6
Economic impacts	124	2.6
Social impacts	132	2.7

Source : World Economic Forum. The Global Information Technology : Report 2016 . Geneva. 2016. P : 57.

It is clear from the above table that Algeria ranked 117 out of a total of 139 countries, which means that it is at the bottom of the ranking, and this is at a rate of 3.2 , which is weak compared to the higher number, which is 7.

Figure N° 3: Algeria in Networked Readiness Index compared to Upper-middle-income group average 2016:



Source : World Economic Forum. Op. Cit. P : 57.

The figure clearly shows that Algeria remains close to the center, compared to middle and high-income countries for the year 2016, which means that Algeria is still far in this indicator from the global average, which means poor use of information and communication technology in Algeria, and The delay in the field of administrative digitization and the digital citizen.

6. Conclusion:

Many of todays challenges to public sector transformation remain. E-Government will still be a key tool to ensure the implementation of user-centric services (whether or not these are online). Governments will progressively streamline front- and back office functions to facilitate service integration across the public sector. Based on lessons learned, four themes for a future agenda emerge:

- ***Increasing coherency and integration of the public sector through innovation and change:*** The public sectors in OECD countries are quickly becoming more coherent and integrated. Eliminating redundancies and

ensuring the sharing of resources where possible will dominate the e-government agenda towards 2020. This requires an unprecedented change of mindsets and traditional silo-thinking towards ownership of the public sector as a whole by each civil servant.

-***Putting users at the steering wheel of the public sector:*** Focusing on users and putting them at the centre of public sector activities diminishes silo-thinking and increases civil service providers' awareness of user needs and demands. E-Government will enable governments to hand-over major parts of public sector development and operations to users directly, since competencies and skills of society at large are improving and affecting an increasing number of people. Collaborative involvement of users in service design and operation could allow them to build their own set of public services adapted to their personal needs at different stages of their lives.

- ***Local service delivery – strengthened co-ordination and management:*** Allowing front-line personnel to deliver public services efficiently and effectively requires a wellfunctioning

and fully coherent and integrated back-office. E-Government enables governments to reprioritise resources, moving more personnel from administrative duties in the back office to front-line duties helping users directly where necessary.

Both local support in the front office and effective co-ordination and management in the back- office are vital. Building-up competencies and skills locally will become imperative. Monitoring and evaluations through the use of relevant measures and indicators will be important coherency tools.

- ***Globalisation of public services:*** Globalisation is affecting all countries' public sectors.

Regional cross-border seamless services are increasingly apparent. This extra pressure for international collaboration and co-operation leads to increased global integration.

International collaboration is already underway in the European Union, and continues to

increase, making both shared e-government services such as cross-border electronic identification systems and health care a real possibility.

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