Emerging Trends in E-Government

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ABSTRACT

The process of globalization will entail reduction in income disparities amongst nations, and increasing income inequalities within nations. For many nations, the challenge of addressing the Digital Divide issue will be as much an external issue as an internal battle.On both fronts, e-government will be a powerful tool to help all types of economies (developed, developing and in transition). However, for different stakeholders, different facets will provide the driver for change and the motivation to engage with e- government and the modernisation agenda. This paper discusses some emerging trends and challenges in line with this diversity of drivers through this paper.

Keywords: E-government, strategy, Business Process Re-engineering (BPR), Change Management.

1. Introduction

Since its inception during the 1990s e-government has undergone many changes and waves and course corrections. Almost every country and Government around the world today has implemented e-Government in some manner and has its own vision, roadmap and objectives for future course of e-Government strategy. But although all governments have many commonalities in their functions, structures and processes, implementation of e-Government has not been homogeneous. E-government can enhance the speed and efficiency of operations by streamlining processes, lowering costs, improving research capabilities and improving documentation and record-keeping. E-government contributes significantly to the process of transformation of the government towards a leaner, more cost-effective government. By intercepting appropriate technology E-government can facilitate communication and improve the coordination of authorities within the different tiers of government, starting with the Central / Federal Government and span across state levels extending through the municipal corporations local self governments (inclusive of Zilla parishads, village panchayats) The success can be measured in the true sense when it impacts all the stakeholders involved..

Several countries around the world are attempting to revitalize their public administration and make it more proactive, efficient, transparent and especially more service oriented. To accomplish this transformation, governments are introducing innovations in their organizational structure, practices, capacities, and in the ways they mobilize, deploy and utilize the human capital and information, technological and financial resources for service delivery to citizens. In this context, the appropriate use of ICT plays a crucial role in advancing the goals of the public sector and in contributing towards an enabling environment for social and

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economic growth. The results of the United Nations e-Government Survey 2008 indicate that governments are moving forward in e-government development around the world.

However, for different countries and different governments, the approach and priorities are different. For some, especially those focused on improving access and delivery of services, this is primarily about the front-end interface with customers and citizens. It is about providing better organized, aligned and often integrated information flows, new transactional capacities, as well as new mechanisms for feedback, consultation and more participative forms of democracy. For others, especially those engaged in the management and delivery of public administration, it is about driving down costs and improving the effectiveness and efficiency of 'back office' functions and the basic machinery of government. For those working at the transnational level it is about removing the barriers to international cooperation and development and creating an agenda of connected governance globally.

However, given the high demands placed by e-government on a multitude of foundational pillars which include prerequisites of infrastructure, appropriate policies, capacity development, ICT applications and relevant content that need to be in place to fully implement e-government services, progress is slow. Only a few governments have made the necessary investment to move from e-government applications *per se* to a more integrated connected governance stage.

Table 1: Regional e-Government Readiness Rankings

Region	2008	2005	Region	2008	2005
Africa			Americas		
Central Africa	0.2530	0.2397	Caribbean	0.4480	0.4282
Eastern Africa	0.2879	0.2836	Central America	0.4604	0.4255
Northern Africa	0.3403	0.3098	North America	0.8408	0.8744
Southern Africa	0.3893	0.3886	South America	0.5072	0.4901
West Africa	0.2110	0.1930			
Asia			Europe		
Central Asia	0.3881	0.4173	Eastern Europe	0.5689	0.5556
Eastern Asia	0.6443	0.6392	Northern Europe	0.7721	0.7751
Southern Asia	0.3395	0.3126	Southern Europe	0.5642	0.4654
South-Eastern Asia	0.4290	0.4388	Western Europe	0.7329	0.6248
Western Asia	0.4857	0.4384			
Oceania	0.4338	0.2888			
World Average	0.4514	0.4267			

Comparative examinations of country performances must therefore begin from the premise that no two countries are alike, and that national trajectories will be shaped by variables both within the public sector (including multiple levels of government) and across society at large. As a result, there is some invariable tension between mapping out global e-government trends and specific national trajectories and how they relate to such trends (http://unpan1.un.org).

In the European Union Government revenues account for some 45% of GDP and public authorities purchase 15 to 20% of GDP or €1500 to 2000 billion every year. Electronic procurement and invoicing could result in savings in total procurement costs of around 5% and reductions in transaction costs of 10% or more, leading to savings of tens of billions of euros annually. (http://www1.oecd.org)

According to the Organization for Economic Cooperation and Development, Knowledge Management (KM) has for some time been at the core of government tasks - inseparable from strategy, planning, consultation and implementation. This realization has prompted some governments to put KM high on their policy agendas. (http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN028607.pdf)

The essence of KM is to provide strategies to get the right knowledge to the right people at the right time and in the right format.(Milton, et al. 1999) KM is based on the idea that an organization's most valuable resource is the knowledge of its people.

The successes and potential of E-government are already clearly visible with several EU countries ranking amongst the world leaders. Electronic invoicing in Denmark enables taxpayers to save €150 million and businesses to save €50 million a year. If introduced all over the EU, Annual savings could add up to over €50 billion. The disabled people in Belgium obtain benefits over the Internet in seconds, whereas previously it took 3 or 4 weeks for benefit administration. Such timesavings and convenience can become widespread and benefit all citizens not only in the European Union but also globally for many public services. (http://ec.europa.eu/information_society/tl/soccul/egov/index_en.htm)

"The biggest change has been the declining dominance of American technology," said Darrell West, vice president and director of Governance Studies at Brookings. (http://www.brookings.edu) "I think the problem is that the U.S. is not investing in technology like other governments. I think the report should be a wake-up call for the United States." (Bain, 2008)

Interestingly as a rejoinder from the political fraternity both presidential candidates Senator Barack Obama of the Democratic Party candidate from Illinois and Senator John McCain Republican Party candidate from Arizona have pledged to make expanding Internet access a priority. (http://techdailydose. nationaljournal.com)

2. Holistic Approach of the European Union

The European Public Administration Network (EPAN), publication entitled "Does e-government pay off?" identifies seven types of interconnected tangible benefits of e-Government: (http://www.eupan.org)
- Improved quality of information and information supply
- Reduction of process time
- Reduction of administrative burdens
- Cost reduction
- Improved service level
- Increased efficiency
- Increased citizen / customer satisfaction

Beyond the above tangible benefits of e-government, broader societal, political or economic benefits can also be identified: (COM, 2003)
- Openness and transparency
- Increased participation in the information society
- Increased democratic participation
- Enhanced policy effectiveness
- Increased economic competitiveness

In developing economies like India, Govt. of Andhra Pradesh E- Tendering, and reverse auction is an example, this trend is leading to increased competition amongst business. These sets of broad societal, political and economic benefits of e-government, some of which can hardly be quantified, make it impossible to measure e-government returns using traditional Return on Investment (ROI) methods. Effective E-Government involves rethinking organisations, processes and changing behavior, so that public

services are delivered more efficiently to the people who need to use them. The Authors also studied the E-Government Plan of the European Union which focuses on five major objectives for E-Government with specific objectives to be achieved by year 2010: (http://europa.eu.int/information_society)

- No citizen left behind: easy access for all through E-Government so that by 2010 all citizens benefit from trusted, innovative services.
- Making efficiency and effectiveness a reality – high user satisfaction, transparency and accountability, a lighter administrative burden and efficiency gains.
- Implementing high-impact key services for citizens and businesses - by 2010, 100% of public procurement will be available electronically, with 50% actual usage, with agreement on cooperation on further high-impact online citizen services;
- Putting key enablers in place - enabling citizens and businesses to benefit, by 2010, from convenient, secure and interoperable authenticated access across Europe to public services;
- Strengthening participation and democratic decision-making - demonstrating, by 2010, tools for effective public debate and participation in democratic decision-making.

2.1 Surveying the physical infrastructure existing in the European Union
Citizens around the world have generally positive attitudes about online government services, a majority only use government web sites to gather information on things like tourism or health rather than conduct actual transactions such as applying for passports or filing taxes online. The inevitable starting point would be to take an assessment of the Internet availability amongst the stakeholders namely – individual / household (G2C – enablement), amongst business enterprises, the usage for transacting business over the Internet to understand the effectiveness of the strategy to arrive at the suitable approach that can perhaps be adapted by all the three types of economies.

For this purpose the authors studied from the various published data to study the various patterns of usage of Internet amongst individuals, enterprises which is depicted in the chart below:
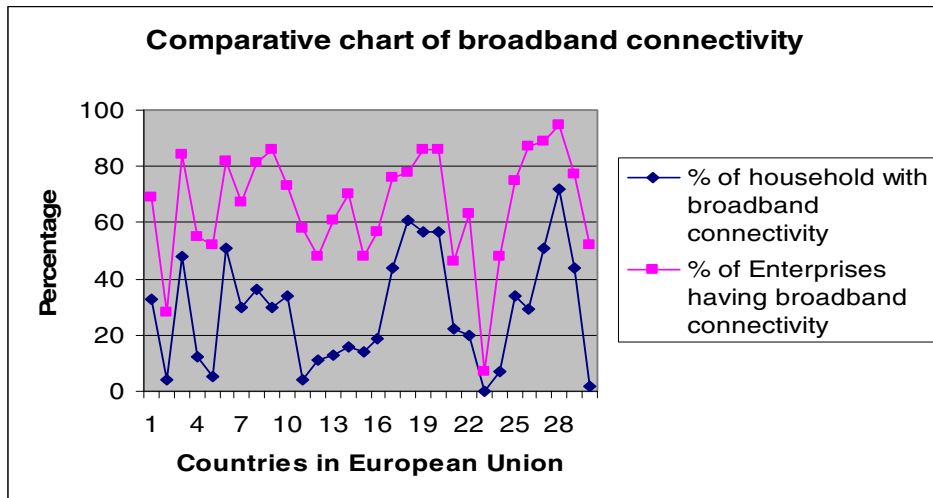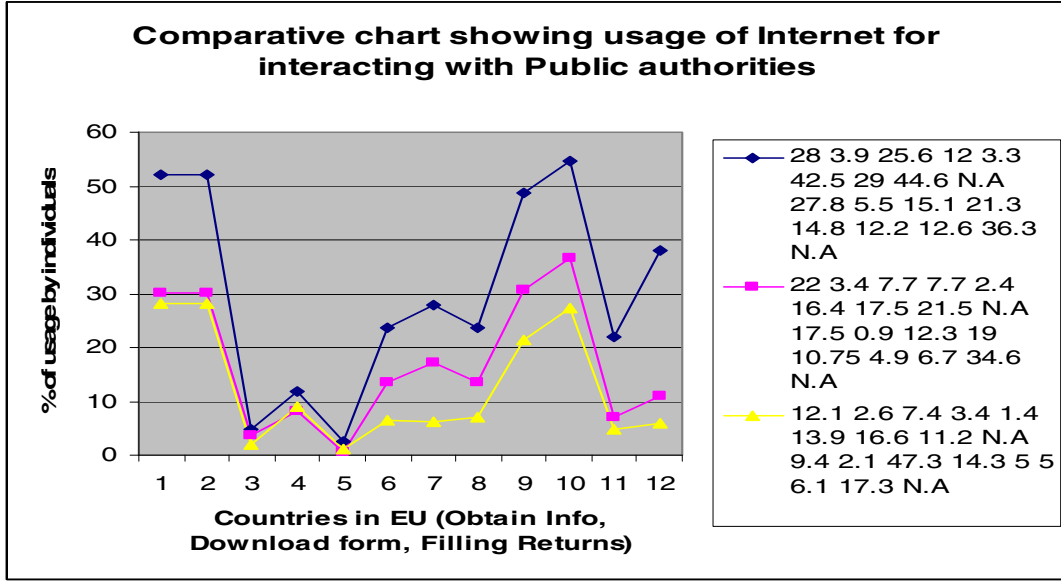

Data Source: Refer appendix

Figure 1: Broadband connectivity availability amongst households and Enterprises in the European Union,

It is interesting to note that in the cases of Denmark, Malta, Netherlands, Norway, Sweden and Iceland the internet broadband penetration amongst household and individuals are greater than 50% and the gap being the least in the case of Malta and Iceland. It was quite surprising that the gap between households and

Enterprises was 39% and 56% in the case of United Kingdom and France two developed nations.

Data Source: Refer appendix
Figure 2: Usage for interaction with Public authorities by individuals in EU
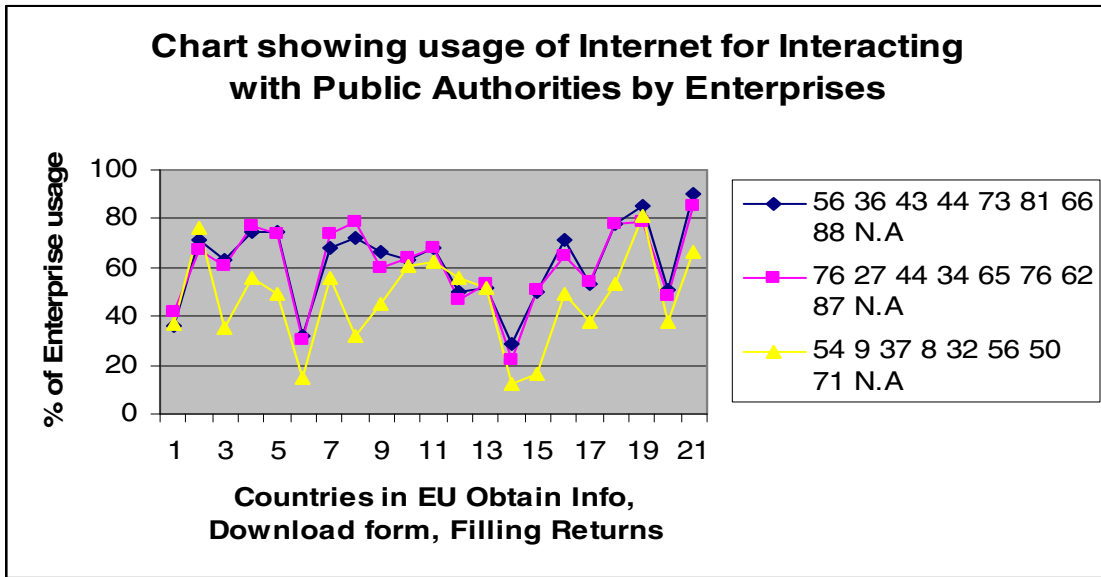
Data Source: Refer appendix
Figure 3: Usage for interaction with Public authorities by Enterprises in EU,

It is clear from the above two charts that in the case of Business Enterprises the level of confidence amongst themselves with necessary infrastructure to interact with the public authorities are increasing in the adoption and acceptance of e-government.

2.2 M-Government

Mobile technology is fast becoming a mechanism for delivering governance. (Tom, 1994) Some of them are listed below.

- The online Grievance Redressal Tracking System (OGRTS), Ranga Reddy district, Andhra
- Pradesh, India
- Income Tax Department, Government of India
- TXT CSC: SMS Service for the Philippines Civil Service Commission
- Colorado State patrol , Public safety agency in NY
- The mobile student Program (USA): m-Government in Education
- District level m-government services model of China
- M-Government and Health care for elderly in Sweden

A Chennai based Heart Specialty Hospital carried out filed trials for transmitting ECG to a hand held mobile phone to study the scope of m-Government in the health sector. (Tanveer, 2007)

3. Diversity of Trends, Challenges and Opportunities for E-government

This section needs to be substantially expanded since this is the crux of the paper.

The 2008 global survey report of UN, has made some significant and path breaking observations and suggestions. The theme of the previous report published in 2005 was 'from e-Government to e-Inclusion'. The report specified a unilateral and uni-directional goal for e-Government for all countries. In 2005, the main concerns were the disparity between e-haves and e-have-nots. It therefore focussed on presenting the disparities in access and use of ICTs around the world. The recent survey acknowledges that these disparities exist but not necessarily as a chasm between e-haves and e-have-nots. In the last three years, e-Government has been embraced by almost all 193 nations who are members of the UN. The emphasis now is on the e-Government roadmap chalked out by different nations based on their unique set of priorities and challenges. The theme of the 2008 report is 'from e-government to connected Governance' and the second half of the report assesses the challenges in moving from e-Government to connected government.

In order to help frame this broad assessment, three main phases of e-government strategy and activity are put forth as ways of encapsulating the main focus of e- government on the one hand, and the major challenges facing public sector leaders and all stakeholders in pursuing e-government on the other hand.(http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN028607.pdf)

The three (interrelated and often overlapping) phases are as follows:

- *Infrastructure:* Creating an information infrastructure both within the public sector and across society at large, one based upon reliable and affordable Internet connectivity for citizens, businesses and all stakeholders in a given jurisdiction;
- *Integration*: Leveraging this new infrastructure within the public sector in order to better share information (internally and externally) and bundle, integrate and deliver services through more efficient and citizen-centric governance models encompassing multiple delivery channels; and
- *Transformation:* Pursuing service innovation and e-government across a broader prism of community and democratic development through more networked governance patterns within government, across various government levels and amongst all sectors in a particular jurisdiction.

E-Government applications will continue to grow at a rapid pace. The Governments across the globe can ill afford to ignore this resultant emergence of a fluid state of changing scenario. Technology will only be at best a tool to meet the desired governance delivery objective. The next few years will see some of the

developing countries challenging the developed countries in the area of e-government.

The changing trend has already started. Competition amongst nations and politicians championing the cause of E-Government are positive indicators. Based on our literature reviews of various annual report starting from year 2000 by United Nations which keeps reporting on various parameters that enables chugging of the E-government drive, we divide the subsequent trends amongst the developed nations and the developing nation. (Note: States within a country/ and Local bodies within states the level of disparity will exist with each one trying to overcome them).

3.1 Future Trends, Concerns and Opportunities amongst Nations
Future predictions are based on some assumptions. In his research paper Georg Aichholzer, has used following 3 scenarios:
- A prosperous and more just Europe
- A turbulent world
- Recession and reorientation

For the purpose of this paper, we are assuming the 1st scenario for the entire world, i.e. "Europe experiences an economic upswing in which practically all segments of society participate. Moore's Law is still in force and ICT continues to contribute to the prosperity and sustainable development of Europe".(Prasad, 2007)

In line with the assessment of UNDESA, we foresee that e-Government will continue to grow and expand rapidly, but with different directions, drivers, and opportunities in different parts of the world. For the sake of further analysis, we have grouped the nations in to two groups; viz.
- Developed Nations
- Developing nations.

The following Table 2 summarises the predictions about the directions and goals that are most likely to be pursued by nations in the two categories.

Table 2: E-Government Trends in the next 3 years

Developed Nations	Developing Nations
1. Portals – Increasing use of e-com and e-biz	1. Portals – Increasing
2. Consolidation of Websites	2. Proliferation of Websites
3. One-Stop Government	3. First time Creation of huge Government Database
4. Unique Citizen ID	4. PPP model of Financing e-Government
5. Life Cycle Management	5. Mobile Governance (M-Gov), Mobile Commerce (m-commerce)
6. Asset Consolidation	6. Capacity Building (CB) and Content Management (CM)
7. Employee Consolidation	7. Policies, Laws Rules and Standards
8. Radical Organizational Restructuring (Beyond BPR and Change Management)	8. Increase in Citizen Service Centers (CSC) and Kiosks

The developed nations shall pursue the goals of connected government, service innovation and huge amount of cost savings by leveraging e-government for asset and employee consolidations.(Aichholzer) The consolidation will obviously require a radical way of structuring government organizations and hierarchies. On the other hand, the developing nations focus shall be on creating an information infrastructure both within the public sector and across society at large; and deliver services through more

efficient and citizen-centric governance models encompassing multiple delivery channels. (http://www.intgovforum.org/cms) An important aspect of the infrastructure creation shall be framing of policies, laws, rules and standards and we can expect to see hectic activity in this area.

From the above table on the directions of development flow the concerns amongst the public administrators and the political fraternity. The following Table 3 summarizes our assessment about them.

Table 3: E-Government Concerns

Developed Nations	Developing Nations
1. Identity thefts	1. Content Management
2. Protection of Data Privacy (Privacy concerns of citizens)	2. Business Continuity Planning (BCP)and Disaster Recovery (DR)
3. Technological Advances	3. Standards Development and Adoption
Citizen participation, e-participation (e-information, e-consultation, e-decision making)	4. Collaboration, Efficiency, Corruption (possible rise in corruption and / or Resistance to Decrease)
4. Going green	5. Digital inclusion Bridging the gap between e-haves and e-have-nots

Most of these concerns actually describe new challenges, not yet faced by the policy makers and implementers of e-Government in the respective groups. While the CIOs of developed nations shall struggle to keep on top of technology at all times, citizens shall be more skeptical of connected governments in the absence of fool proof methods for privacy protection and prevention of identity thefts.

Furthermore, when e-government moves from the passive provision of information to an interactive provision of information phase (whereby government services are being electronically delivered or the government is acquiring services and/or goods online) e-government assumes a role equivalent to e-commerce, necessitating the public administration acting as the fulcrum of the transaction to ensure a proper regulatory framework to guard against data theft (http://ec.europa.eu).

A robust implementation of e-participation may throw up a political surprise resulting in possible turmoil and review of democratic processes and institutions. In the developing nations the focus will shift to continuity and content management. The more advanced among developing nations shall try to embark on to the connected government paradigm. And last but not the least, e-inclusion will become the chief concern for sharing the benefits of a functioning e-government across the society,

This analysis leads us to our ultimate projection about possible future opportunities for the ICT vendors, solution providers and service providers. The following Table 5 summarises our projections:

Table 5: E-Government opportunities for building solutions

Developed Nations	Developing Nations
1. Identity Management	1. Content Creation and Content Management
2. New Technology Absorption	2. CB and CM Services
3. One Stop Government Systems	3. PPP
4. Breach of Privacy "Watchdog Solutions"	4. Data Protection and data maintenance services
	5. BCP and DR Management
	6. M-Computing and Digital inclusions

4. Concluding Remarks

As the technology advances, the scope and depth of e-government services are rapidly expanding. Rural communities, underprivileged communities, are yet to realize the full benefits of e-government services. Over the next few years students, professionals and our political, social and economic leaders will develop the skills to deal with the exponential expanse of information. The amount of time we have to learn and act on new information is finite. Therefore, to take full advantage of the e-Government's potential we must learn how to get more out of time we spend disseminating and learning from new information. This research paper has discussed the growth of e-Government across the world during the 21st century. It has tried to interpret the results of the global surveys conducted by UNDESA, and other statistical data from various other sources. Finally it has discussed specific projections about the emerging trends, concerns and opportunities in e-Government in the immediate future. A journey into the unknown is beset with extremely scary challenges. The first pioneers do not have any maps. They assumed that opportunity lay ahead. Change leadership pioneers seldom have maps and little reconnaissance information to support. (Alem, 2008) The same applies to e-government initiatives.

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Appendix

European Union Countries mentioned in graph X –Axis (Secondary Data Source: Eurostat – Figures taken from Individual Nation wise Reports)

1	2	3	4	5	6	7	8	9	10
Austria	Bulgaria	Belgium	Cyprus	Czech	Denmark	Estonia	Finland	France	Germany

11	12	13	14	15	16	17	18	19	20
Greece	Hungary	Ireland	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway

21	22	23	24	25	26	27	28	29	30
Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	Iceland	UK	Turkey