Emerging Trends in E-Government

Mohan Datar¹, Anil Panikar²* and Jamal Farooqui³

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

¹ Gov3 Ltd., Yashowan, T. H. Kataria Marg, Mahim (W), Mumbai, India
² TS Management Consultancy, 6-1-133/20, Hari Nilayam, Brooke Bond Colony, Padma Rao Nagar, Secunderabad. Andhra Pradesh, India
³ Department of Management Studies and Research, Aligarh Muslim University, Aligarh, India
* Corresponding Author: (E-mail : anil_panikar@tsmconsultants.com, Telephone: +91 322294556)
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          | 0.2530          | 0.2397          | Caribbean       | 0.4480          | 0.4282          |
| Central Africa  | 0.2879          | 0.2836          | Central America | 0.4604          | 0.4255          |
| Eastern Africa  | 0.3403          | 0.3098          | North America   | 0.8408          | 0.8744          |
| Northern 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:

![Comparative chart of broadband connectivity](chart.png)

**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.

\[\text{Data Source: Refer appendix}\]

**Figure 2:** Usage for interaction with Public authorities by individuals 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 field 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>
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<th>Table 2: E-Government Trends in the next 3 years</th>
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<tbody>
<tr>
<td>Developed Nations</td>
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<tr>
<td>2. Consolidation of Websites</td>
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<td>3. One-Stop Government</td>
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<td>4. Unique Citizen ID</td>
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<td>5. Life Cycle Management</td>
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<td>6. Asset Consolidation</td>
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<td>8. Radical Organizational Restructuring</td>
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<td>(Beyond BPR and Change Management)</td>
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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>
<thead>
<tr>
<th>Developed Nations</th>
<th>Developing Nations</th>
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<tbody>
<tr>
<td>1. Identity thefts</td>
<td>1. Content Management</td>
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<tr>
<td>2. Protection of Data Privacy (Privacy concerns of citizens)</td>
<td>2. Business Continuity Planning (BCP) and Disaster Recovery (DR)</td>
</tr>
<tr>
<td>3. Technological Advances</td>
<td>3. Standards Development and Adoption</td>
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<tr>
<td>Citizen participation, e-participation (e-information, e-consultation, e-decision making)</td>
<td>4. Collaboration, Efficiency, Corruption (possible rise in corruption and/or Resistance to Decrease)</td>
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<tr>
<td>4. Going green</td>
<td>5. Digital inclusion</td>
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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:

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<th>Developed Nations</th>
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<tr>
<td>1. Identity Management</td>
<td>1. Content Creation and Content Management</td>
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<td>2. New Technology Absorption</td>
<td>2. CB and CM Services</td>
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<td>3. One Stop Government Systems</td>
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<td>5. BCP and DR Management</td>
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<td>6. M-Computing and Digital inclusions</td>
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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.

References
15. Balanced E-government 10 Punkte-plan (http://bertelsmann_shiftung.de/cps - translated from German language)
17. Janson, Robert, How Reengineering Transforms Organizations to Satisfy Customers, National Productivity Review, December 22, 1992; Pg. 45.
21. Prasad R, Vishnu K et al “Business Process Re-Engineering (BPR) and Technology Interception The
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About the Authors

Mohan Datar as a professional consultant shares his expertise in e-government with global consultants like Gov3 Ltd. and ABM Knowledgeware Ltd. His other areas of expertise are Application Software Development, IT Strategy Consulting, IT governance and Security. He has over three and half decades of experience in ICT. He has worked in India, Middle East and UK. His experiences range from in-house IT management to software engineering and customer support functions in IT and running an international software services organisation. He is an expert on citizen services delivery. Mohan Datar is a Fellow of Computer Society of India. He is a Certified Systems Auditor (CISA), Associate of Business Continuity Institute of UK. (ABCI), Certified Quality Analyst (CQA) and Lead Auditor for ISO9001:2000.

Anil P. Panikar is the Managing Partner at TS Management Consultancy. After over two decades of hands-on experience in the areas of Business Development, Pre-Sales, Software Development in the ICT Industry the author founded TS Management Consultancy in January 2006. The author has extensive experience in the area of Project Management of e-government with varying budget sizes covering the entire state of Andhra Pradesh. The author has extensive experience in ERP, BPR and SCM consulting. When associated with his previous employers he provided the necessary leadership for building IT Consulting Competence Center.

Jamal A Farooqui is a Reader at the Department of Business Administration in the prestigious Aligarh Muslim University. He has a Masters Degree (M. Tech) in Mechanical Engineering and a Doctorate in Management Studies. His Teaching experience spans over 15 years in India, Sharjah and Oman. He specializes in the area of Supply Chain Management and Quality Management. He is also a guide for Doctoral dissertation at the University.

Appendix

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

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