Re-visiting E-government

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ABSTRACT

In an earlier contribution the following ten emerging e-government challenges were identified: 1. Efficient Public Service Delivery, 2. Emerging New Technologies, 3. Global and National League Tables, 4. Management Information Systems, 5. Government Websites Information Overload, 6. E-government Search Engines, 7. Semantic Web for E-government, 8. Wiki Technology in E-government, 9. Monitoring E-government Investments, and 10. Customer Relationship Management (CRM) and Electronic CRM (E-CRM) in E-government (Misra 2006), In this paper, taking the exercise further, another ten emerging e-government challenges have been identified at the end of year 2008, namely: 11. Six megatrends which are reshaping governments and societies, 12 The global governance crisis, 13. Knowledge Glut and Its Poor Utilisation, 14 Capture of governments by private information technology (IT) companies, 15. Legal enablement of e-government, 1, E-government audit requirements, 17 Free and open source software (FOSS) and hardware, 18, Green information technology (IT) in e-governance, 19. Public policy space and 20, The e-government managerial challenge, The paper then draws attention to substantial investments being made in e-government worldwide as well as in India and concludes that the progress of e-government has been slow but steady.

Keywords: E-government, Emerging Challenges, Megatrends, Global Governance, Knowledge Glut, Government Capture, Legal Enablement, Audit, Open Source, Green IT, PublicPolicy, Managerial Challenge

1. Introduction

In an earlier contribution ten emerging e-government challenges were identified: *Challenge No. 1*: How to achieve the objective of efficient public service delivery which is not yet being successfully met by e- government? *Challenge No.2:* How to make e-government anticipate emergence of new technologies and respond to them quickly? *Challenge No.3*: How can global and national league tables contribute to e-government policy formulation and implementation? *Challenge No.4*: How to set up dependable management information systems (MISs) in government in the light of information explosion and other developments? *Challenge No. 5*: How not to keep on overloading government websites with all sorts of information but to anticipate and meet information and/or transaction needs of the citizens quickly and in user-friendly manner? *Challenge No. 6*: How to set up appropriate search capabilities on e-government websites to ferret out the required information? *Challenge No. 7:* How to make use of semantic web in e-government websites to improve the quality of the required government information? *Challenge No. 8*:

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How to make use of wiki technology in e-government if public sector is constrained by resources as it is? *Challenge No. 9*: How to monitor investments in e-government as serious problems of unproductive investments in e-government have started surfacing? *Challenge No. 10*: How to put proper customer relationship management (CRM) and/or electronic customer relationship management (eCRM) programmes in place in e-government in developing/transitional economies? (Misra 2006). As one goes deeper into the field of e-government, one finds that there are many more challenges which need to be recognised with a view to accelerate the pace of development of e-government. Accordingly ten more emerging e-government challenges are identified below which have direct bearing on the development of e-government.

1.1 Challenge No.11: Six megatrends have been identified which are reshaping governments and societies around the world. How then to align e-governance to these megatrends?

John Naisbitt is credited to have invented the term *megatrend* in his book *Megatrends: Ten New Directions Transforming Our Lives* (1982). In his *Megatrends Asia* (Naisbitt 1996), he identifies *eight* Asian megatrends that are changing the world: From Nation States→ Networks, From Export-led→Consumer-driven, From Western Influence→The Asian Way, From Government-controlled→Market-driven, From Villages→Supercities, From labour-intensive→High Technology, From Male Dominance→Emergence of Women, and From West→East.

But what are *megatrends*? Larsen (2006) defines *megatrends* as "great forces in societal development that will affect all areas - state, market and civil society - for many years to come." Again she notes:

Megatrends are the forces that define our present and future worlds, and the interaction between them is as important as each individual megatrend. That is why futures researchers, companies and others use megatrends when they develop and work with scenarios. Megatrends can be a starting point for analyzing our world.

A recent report - *Government 2020 and the Perpetual Collaboration Mandate* (Cortada et al. 2008), has identified *six megatrends* which are reshaping governments and societies worldwide: (i) *Changing demographics*, (ii) *Accelerating globalization*, (iii) *Rising environmental concerns*, (iv) *Evolving societal relationships*, (v) *Growing threats to social stability and order*, and (vi) *Expanding impact of technology*. The report points out that none of these megatrends is under the control of governments. On the other hand, these megatrends influence governance and e-governance. The report notes:

The future of societies around the world is being shaped by six drivers outside the realm of government control. Powerful changes related to demographics, globalization, environmental concerns, societal relationships, social stability and technology will affect virtually every government, demanding individualized responses suited to each nation, region or locality. These nearly universal drivers will require "perpetual collaboration" that starts with intensified, multi-directional communications, and shared operational and technical standards. (ibid:1).

As such, e-governance is required to align with these megatrends rather than *vice versa*. This requires understanding the current status of governance and e-governance worldwide. The eleventh emerging e-government challenge, therefore, is: *Six megatrends have been identified which are reshaping governments and societies around the world. How then to align e-governance to these megatrends?*

1.2 Challenge No.12: There is crisis in global governance to-day. How then to steer our way as sovereign states in a leaderless world?

Boughton and Bradford (2007:11) define global governance as follows:

The ideal of global governance is a process of cooperative leadership that brings together national governments, multilateral public agencies, and civil society to achieve commonly accepted goals. It provides strategic direction and then marshals collective energies to address global challenges. To be effective, it must be inclusive, dynamic, and able to span national and sectoral boundaries and interests.

There is crisis in global governance to-day. The *WorldPublicOpinion.org* poll of 20 nations around the world finds that none of the national leaders on the world stage inspire wide confidence (WPO 2008).While US President George W. Bush is one of the least trusted leaders, no other leader--including China's Hu Jintao and Russia's Vladimir Putin--has gained a broad international base of support.

The *20th Century Model* needs make over (Boughton and Bradford 2007). After World War I, League of Nations (1919) was set up and it failed. After World War II, United Nations and its spcialised agencies were set up and they too have mixed record. *Global governance* to-day is dominated by a few developed countries. Countries also have grouped themselves to look after their interests. For example a group of 10 countries formed G-10 in 1962, another group of 77 countries formed G-77 in 1964, another group of five countries formed G-5 in 1970s, another group of 24 countries formed G-24 in 197s, yet another group of seven countries formed G-7 in 1980s, and another group of eight countries formed G-8 in 1990s. Such groupings betray narrow and sectarian interests. The existing models also need to be changed to give due importance to developing countries. The twelfth emerging e-government challenge, therefore, is: *There is crisis in global governance to-day. How then to steer our way as sovereign states in a leaderless world?*

1.3 Challenge No. 13: How to resolve the emerging paradox of knowledge glut and plummeting knowledge utilization?

There is information explosion to-day. On face of it, therefore, one expects corresponding greater knowledge creation, its dissemination and utilization by the society at large. But this has not happened. On the contrary, as noted by Quah (2006:37) amid a great information explosion, the share of knowledge that the world puts to good use is falling. Quah notes: "…there is one commodity in excess supply. It's knowledge- and in the long run, the overlooked knowledge glut could be more dangerous than the many more obvious shortages." Again he notes:

Invention is costly and getting costlier. Over the 20th century, the average age at which inventors did their best work rose by six years; the average size of innovation teams grew fivefold. R&D workers and dollars now produce an ever-smaller of patents on average. That's why new drugs cost more than $1 billion to develop (ibid.).

One reason, of course, is widespread prevalence of *information illiteracy.* This in turn is attributable to the demanding concept of *information literacy*, which the U.S. National Forum on Information Literacy, established in 1989, defines as: "the ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand (NFIL n.d.). And this is compounded by the fact that the Web is disorderly. Brown and Duguid (2000) note: "Our results primarily serve to remind us that the Web is a vast, disorderly, and very fast-changing information repository with enormous quantities overlapping and duplicate information and that all its catalogues are incomplete and out of date."

School of Information Management and Systems (SIMS) at University of California, Berkeley states: "Data does not equal information. One of the definitions of "information" is that it is new. The redundancy of the information that inundates the info-rich is astronomical. It is only information, in this sense, the first time they see it. The rest is, at best, data; at worst, "noise." Furthermore, the information often arrives with no authentication as to source, validity of data, etc. (SIMS n.d.). Nevertheless SIMS takes an optimistic view of the situation: "The possession of a pager, cellular phone, fax machine, and PC can bring too much

information. But they can also make our lives safer, more comfortable, and more interconnected." (ibid.). The *thirteenth* e-government challenge, therefore, is: *How to resolve the emerging paradox of knowledge glut and plummeting knowledge utilization.*

1.4 Challenge No. 14: How to prevent capture of governments by private information technology (IT) companies and encourage competition so that it benefits all- the IT industry, governments and citizens?

A noteworthy development in developing countries is the increasing role private sector technology vendors have started playing in discharging some of the traditional functions of government like database management through outsourcing e-government raising, apart from important issues of cost and vendor lock-in, important issues of security and privacy in private hands. Such outsourcing, popularly called public-private partnership (PPP), has been resorted to primarily due to three reasons: (i) Absence of in-house expertise in government, (ii) Large size of projects, and (iii) Effective lobbying by private sector vendors for public-private partnership (PPP).

Dunleavy et al. (2006:1) note:
In the 1960s and 1970s governments in many countries were pioneers in IT development, with their own highly skilled staffs and developed expertise, reflecting the huge impact that computerization and the basic automation of government services had on the modernization of public sector processes and productivity growth in the economy.

Their observation holds good for India too. They add: "What has changed though, is that governments no longer run their own IT functions. To get their systems built, developed, and managed they increasingly rely on the global IT industry, specially the giant 'systems integrator' companies…" (ibid.). Their 5-year project under '*Future Governance*' programme in the United Kingdom "looked at the development of central government contracting for IT systems and the growth of e-government in seven countries- the USA, Japan, the UK, Canada, Australia, Netherlands, and New Zealand" (ibid.). They, among other things, point out to the writing on the wall and offer this sagacious advice:

A shift from actively maintaining oligopolistic practices, and instead to recognizing the long-run, dynamic benefits produced by maintaining stronger competitive tension and more purposeful knowledge-development, is in the interests of the global IT industry as much as it can be beneficial for governments and citizens (ibid.:8).

The fourteenth emerging e-government challenge, therefore, is: *how to prevent capture of governments by private information technology (IT) companies and encourage competition so that it benefits all- the IT industry, governments and citizens?*

1.5 Challenge No. 15: How to legally enable government-to-government (G2G) and government-to-citizen (G2C) e-governments despite problematic terrain of cyber law?

Ever since William Gibson, a science-fiction (sci-fi) writer, popularized the term *cyberspace* in his novel *Neuromancer* (1984), the term has stuck to new vocabulary spawned by the Internet. Contrary to common belief, however, that cyberspace is unfettered space, it is a highly regulated space constraining the conduct of surfers. Lawrence Lessig, the founder of *Creative Commons* in 2001, who has now turned his attention to corruption (*Anon 2007*) in his *Code and other Laws of Cyberspace* (Lessig 1999), had spelled the legal regime regulating the cyberspace consisting of four components: (i) *Law*: The terrestrial laws regulating the cyberspace, (ii) *Code*: The software and hardware code which asks us to follow a pre-determined path; Lessig calls the first code as *East Coast Code*, being dictated by the U.S.Congress in Washington, D.C., and the second as West Coast Code, being dictated by the Silicon Valley, (the latter being also referred to as architecture), (iii) *Norms*: Self-imposed regulation of the conduct by the community, and (iv) *Markets*: which are places of exchange of information.

Despite this mapping of the legal space, many areas continue to exist without legal enablement in e-government. In government-to-government (G2G) e-government, for example, the issues of federalism versus centralism, information sharing and matching within governments (Garson 2006), and legal validity of electronic records (e-records), etc. continue to remain unresolved. Similarly, in government-to-citizen (G2C) e-government, legal enablement of issues like privacy, security, and authenticity remain unresolved. Harris (2001)'s remark that there are snakes in the virtual garden is still true. In our anxiety to push the e-government agenda, we often ignore the fundamental principle of governance, namely, that it runs on laws, rules and regulations and not by our wishful thinking. Ignoring this premise means that we are not providing a sound foundation to e-government. . The fifteenth emerging e-government challenge, therefore, is: *how to legally enable government-to-government (G2G) and government-to-citizen (G2C) e-governments despite problematic terrain of cyberspace?*

1.6 Challenge No.16 How to incorporate audit requirements, which are currently over-looked, in the e-government management and learn lessons from audit reports?

Democratic governments world over have an over-riding provision of audit of public expenditure. Such audit, which is *ex post facto*, is of two types- (i) *performance audit*, and (ii) *financial audit*. A country like India has a Constitutional provision for audit. Article 148 of the Constitution of India provides for appointment of a Comptroller and Auditor General of India. Further, the audit report in respect of accounts of the Union are required to be laid before the Parliament and in respect of accounts of the States, before the State legislatures. The provision of the audit of public accounts has three salutary lessons for e-government.

First, the audit requirements have to be incorporated in e-government project formulation. Secondly, audit reports can have valuable lessons for e-government. For example, audit report of *eCops* project in Andhra Pradesh noted:

Audit of this e-Governance project to improve the efficiency and transparency in policing indicated mixed results in its implementation. The project suffered from serious security lapses, improper input validations, failure to elicit cooperation and acceptance at various levels. The plans of integrating and interfacing with all functionally related departments like hospitals; prosecution, judiciary and jails have not yet taken off. This falls significantly short of the objectives envisaged. eCops if implemented in its full form across the State has potential to improve the quality of policing significantly. (CAG 2004).

Thirdly, risk factors can be taken into account while formulating e-government projects. The Standing Committee on IT-Audit of the International Organization of Supreme Audit Institutions (INTOSAI), which has members from 188 nations, has identified approximately 170 risks of interest (INTOSAI 2005), which can be taken into account while formulating e-government projects. The sixteenth emerging e-government challenge, therefore, is: *how to incorporate audit requirements, which are currently over-looked, in the e-government management and learn lessons from audit reports?*

1.7 Challenge No. 17: How to promote use of free and open source software (FOSS) and hardware in e-governance so that better software/hardware could be had and at lesser cost?

Ever since the term "*open source*" was invented and adopted in *Freeware Summit* on April 7, 1998 in Palo Alto (Moody 2001:167), it has become a powerful movement gaining strength from year to year. It now stands adopted by individuals, corporates and governments worldwide. Its advantages are well known: *Reuse*, *Auditability*, *Innovation*, *Fewer bugs* and *Security* (Hull 2008). In his celebrated essay, *The Cathedral and the Bazaar*, Eric S. Raymond (2001), one of the pioneers of open source movement, had likened the *proprietary software* with (command and control) architecture of a cathedral and *open source software* with (number of eyeballs of) a bazaar. His proposition that "*Given enough eyeballs, all bugs are shallow*" establishes the superiority of open source software over proprietary software from security point

of view.

The open source definition lays down nine criteria that the distribution license of software must meet to be called "open source." (Moody 2001:168). Its first three criteria- *the ability to distribute software freely*, *the availability of source code*, and *the right to create derived works through modifications* (ibid.:168) make it specially attractive to cash-strapped public sector. No wonder it is being increasingly adopted by the public sector. For the U.S., for example, Deek and McHugh (2008:310) cite a study by MITRE corporation which found over 100 open products being used in 250 applications in the (U.S.) Department of Defense (DOD). Similarly they report, citing Adelstein (2005) that in 2004 alone, Russia and Poland bought almost $20 billion worth of Linux-related technologies. Now the hardware has also joined the open source movement (Anon 2008).

Many countries have taken initiative to promote open source .India, for example, has set up National Resource Centre for Free and Open Source Software (NRCFOSS 2008) which runs the National FOSS Portal. Among the products released by it is BOSS (Bharat Operating System Solutions) Version 3.0 on September 4, 2008, which is 'made specifically for the Indian environment.' Department of Information Technology (DIT) also came out with 'Policy on Open Standards for E-governance' in June 2008 which became effective from July 2008 (DIT 2008). Laudable as these steps are, they are, however, not adequate for promotion of open source. The seventeenth emerging e-government challenge, therefore, is: *How to promote use of free and open source software (FOSS) and hardware in e-governance so that better software/hardware could be had and at lesser cost?*

1.8 Challenge No. 18: How to promote Green Information Technology (IT) in E-governance to prevent global warning and climatic change?

de Graaf (2007:2) defines *Green IT*[1] as "the holistic approach to environmentally friendly, sustainable governance and management of the organization (business and IT), its processes and projects." He notes elsewhere: "Up till now, IT has been perceived as being "clean." With the increased attention for ecological concerns, however, management has come to realize that IT is not as environmentally friendly as they thought." (de Graaf (2008). He further notes Gartner (2008) "estimates that global ICT usage accounts for approximately 2% of all global carbon dioxide (CO_2) emissions. This is equivalent to all CO_2 emissions caused by aviation. CO_2 emissions result from the use of PCs, servers, cooling, fixed and mobile telephony, networks, office telecommunications and printers**."** (ibid.).

A portal devoted to Green IT cites, from various sources, following revealing factoids: Computers generate an estimated 35 million tons of the gas each year. Each year 125 million computers are taken out of circulation worldwide and most of these end up in landfill sites. 70% of an average company's power consumption goes to IT. The average PC consumes 600 kWh annually. Two thirds of that electricity is wasted because most PCs are running at full power when no user is present. (Green-ict.com 2008).

From public policy point of view, e-governance must take care of IT Governance, which in its turn must take care of Green IT (Figure 1). Since IT contributes to *global warning*, which in its turn contributes to *climate change*, public policy interventions are necessary to address the situation. The eighteenth emerging e-government challenge, therefore, is: *How to promote Green Information Technology (IT) in E-governance to prevent global warning and climatic change?*

1.9 Challenge No. 19: How to prevent degeneration of e-government from non-partisan expert public policy space to partisan and controversial public policy space?

E-government so far had a very successful (lucky?) policy run having been almost universally subscribed to by various stakeholders. The party may, however, not last for ever. Theodore Lowi (1972), a political scientist, had developed a fourfold typology of public policies: (i) redistributive, (ii) distributive, (iii)

regulatory, and (iv) constituent. West (2005:168-69) notes: "For much of its history, e-government has fit within the area of low conflict, low partisanship, limited visibility, and narrow benefits represented by constituent policies. Conflict has been muted because digital policy is a technocratic area dominated by experts. There has not been much partisan controversy because e-government is seen by the public in positive terms."

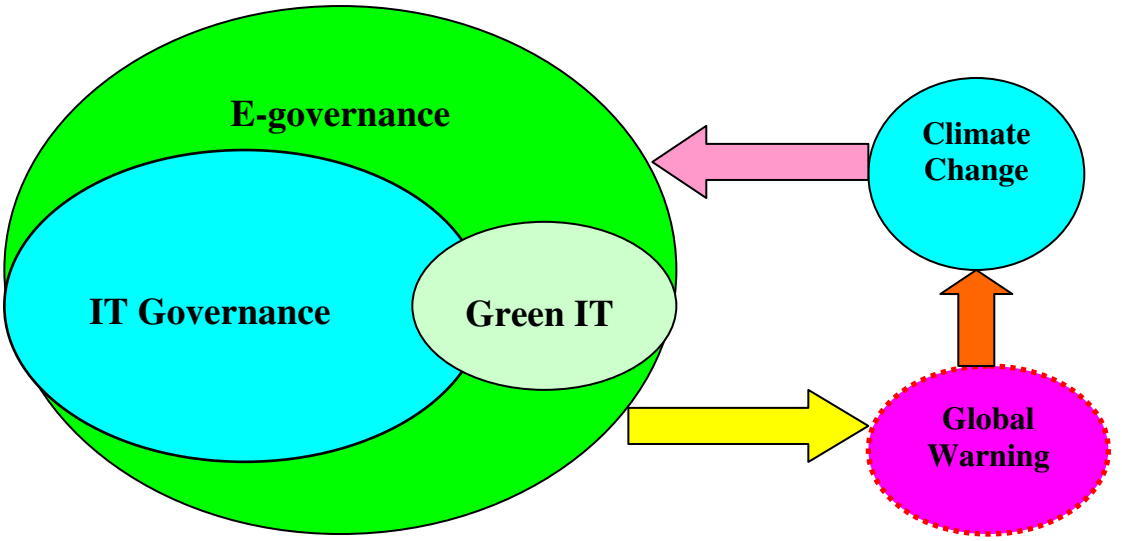

Figure 1: Public Policy Spaces for Green Information Technology (IT)

E-government has been successfully sold to policy makers in developing countries so far on a wide variety of grounds, for example, citizen convenience (anywhere, anytime government), cost saving in government processes (streamlined working), its present non-controversial nature, its promise of benefit to a large section of society, etc. However, time is running out for e-government. And if e-government fails to produce tangible gains both for governments and citizens, non-citizens, business, etc., there is an imminent danger that e-government may quickly degenerate from its current blessed state of "constituent" public policy space (Table 1) to other policy types.

West (2005:169) observes: "Digital government is moving towards the characteristics of other policy types, however. It is becoming more partisan and more controversial." He notes:

Political partisanship, more aggressive union organizing, and more critical news coverage undermine the technocratic vision of e-government that has sustained this domain since its inception. Both unions and management see e-government as a new policy development to be contested….If this trend continues, e-government will move from a "constituent" or self-regulative policy area to either a regulative or redistributive issue, depending upon the scope of beneficiaries. (ibid., p-170).

The nineteenth emerging e-government challenge, therefore, is: *how to prevent degeneration of e-government from non-partisan expert public policy space to partisan and controversial public policy space?*

1.10 Challenge No. 20: How to make e-government a managerial challenge and make managers face it competently by institutionalizing top management support?

It was management *mahaguru* (great teacher) Peter Drucker who had once observed that there are no developing or developed countries but only poorly managed and well managed countries. When all is said and done in e-government, the responsibility to formulate, implement, steer and market an e-government project falls squarely on the shoulders of the e-government manager, appropriately designated as Chief

Table 1: E-government in Public Policy Space

S.N.	Type of Public Policy	Concentration of Benefits	Intensity of Conflict	Remarks
1	Constituent	Narrow	Non-zero-sum	Low visibility, expert domination, nonpartisanship, absence of political controversy
2	Redistributive	Broad	Zero-sum	Transfer of resources from one sector to another, politics highly partisan and controversial
3	Regulatory	Narrow	Zero-sum	Low visibility, limited political conflict, some partisanship. Examples: environmental legislation, consumer safety
4	Distributive	Broad	Non-zero-sum	Low partisanship, legislators support each other's projects. Examples: Highway bills and federal grants

Source: Compiled from West (2005:168)

Note: Zero-sum, a term from Theory of Games[2], means that a player gains at the cost (loss) of other.

Information Officer (CIO) elsewhere (Misra 2007), a term used to indicate officers in-charge of information technology (IT) in central ministries/departments of government of India and IT Secretaries in the states.

Aware of failure of large-scale information technology (IT) projects in e-government and calling e-government a dangerous enthusiasm, Gauld and Goldfinch (2006) undertake an extensive review of literature and propose a model containing four 'pathological' managerial enthusiasms: 1. *Idolisation* (public servants 'idolise' IT and see it as leading to great benefits), 2. *Technophilia* (More and better technology prevents or fixes problems), 3. *Lomanism* (Feigned or genuine belief of IT suppliers and sale staff in their company's products), and 4. *Managerial faddism* (new management or structures bring benefits and prevent or fix problems.

But an e-government manager can be as competent as top management wants him to be and top management's priority for e-government cannot be taken for granted. Top management, by design, has to look after myriad of interests of which e-government is one and it may not be as pressing as his other concerns are. One way out of this situation is to institutionalize top management's support to e-government. The twenteeth emerging e-government challenge, therefore, is: *how to make e-government a managerial challenge and make managers face it competently by institutionalizing top management support?*

2. Concluding Remarks

IT spending worldwide will exceed $3.4 trillion in 2008, an increase of 8 percent from 2007 spending, according to Gartner Inc. (ciol.com 2008a). India is currently spending $84.6 billion on ICT and that figure is set to rise to $130.9 billion by 2011, according to analysts Global Insight (ciol.com 2008b). These are very substantial sums indeed, particularly for a developing country. This requires a great deal of professional expertise in proper e-government planning for better results. The ten emerging e-government challenges identified earlier (Misra 2006) continue to be unmet today. Not that no action is being taken in these directions. Far from it. But the action so far being taken is not good enough for realizing the vast untapped potential for e-government. Moreover, as one goes deeper into e-government, one finds more e-government challenges lurking here and there crying for attention. As a result ten more e-government challenges have been identified in this paper which require to be addressed. The first phase of e-government: the *i (information)-government*, namely, provision of information[3], has been an incontestable success (Lucas 2008). E-government now, however, appears to be loosing its steam. In sum, e-government progress has been *slow* but *steady* as assessed at the end of year 2008.

Notes

[1]There are about 30 greenhouse gases (CHGs). Of these the main ones are CO_2, CH_4, CFCs and N_2 O which are produced by human activity. CHGs, which are expressed as carbon footprint equivalent to CO_2 (kgs or tones), are transparent to sunlight but absorb radiation thus causing global warming and climate change. Earth's temperature reportedly rose by 0.750 C during last 100 years and is estimated to rise by 60 C during next 100 years.

[2] The term was popularized by von Neumann, John and Oskar Morgenstern's classic, *Theory of Games and Economic Behavior* published in 1944 by Princeton University Press. The game theory had a major impact on social and other sciences. The 60th- anniversary edition has been recently published. Check http://press.princeton.edu/titles/7802.html (accessed: September 18, 2007).

[3] To realize the outstanding nature of this achievement, just imagine how difficult it was just to obtain routine information from the government. This is not to say that e-government has revolutionized citizen-state relationship and one can obtain all the information one needs *online*. Far from it. But a good beginning has been made.

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