Towards Excellence in E-Governance

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Working Paper No. 2005-1

April 4, 2005

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ABSTRACT

E-governance initiatives are common in most countries – industrialised as well as developing, as it promises a more citizen-centric government with reduced operational cost. Unfortunately most of these initiatives have not been able to get the claimed benefits. Often the reason for this failure is a techno-centric focus rather than a governance-centric focus in the initiative. This paper explores the necessary attributes of a governance-centric initiative under the banner ‘excellent e-governance’ (e²-governance) and describes a methodology called ‘e-governance engineering’, which if used will ensure excellence in e-governance implementations.

Keywords: E-governance; e-government; excellence; e-governance methodology

Introduction

In the past government organisations have paid little attention to service quality or responsiveness to clients, but this changed with the movement termed “new public management” (NPM) which occurred in most developed nations around 1990s (Hughes, 2003; Saxena, 1996). The NPM emphasises professional management practices (rather than simply ‘administration’) including service quality, performance management and risk management (Leeuw, 1996). E-governance is perhaps the second revolution in public management after NPM, which may transform not only the way in which most public services are delivered, but also the fundamental relationship between government and citizen (The Economist, 2000). Broadly, e-governance involves the use of information and communication technologies (ICTs) to transact the business of government. At the level of service, e-governance promises full service available 24 hours a day-seven days a week, greater accessibility, and the capability to obtain government services without visiting their offices, and reduced service cost. At the level of basic factors (government accountability and general acceptance of state institutions), e-governance contributes to the functioning of democracy by online provision of government information which would otherwise be difficult to obtain or unavailable, and through online debates and plebiscites (Teicher, Hughes & Dow, 2002).


Oddly enough, in spite of the world wide diffusion of e-government initiatives, getting the claimed benefits of e-governance has not been easy for various technological as well as organisational reasons. This is true of both industrialised as well as developing countries (Heeks, 2003; Pacific Council on International Policy, 2002; Strejeck & Theil, 2002; Holliday, 2002; Wescott, 2001). This paper explores into the attributes which will ensure a governance-centric focus in the initiative to enable realisation of these benefits, and proposes use of an e-governance methodology to accomplish this goal. The paper is organised as follows. The next section differentiates between the terms e-
governance and e-government. It then discusses e-governance implementations in the developing countries. The next section discusses the techno-centric versus governance-centric views of e-governance. Next it defines the meaning of excellence in e-governance, or ‘excellent e-governance’, and gives two case studies as an example. This is followed by a list of issues to be faced in bringing excellence to e-governance. Finally, the paper gives an overview of e-governance engineering methodology, which is a framework to ensure excellence in e-governance projects, which is followed by its benefits and conclusion.

E-governance and E-government

There is an important distinction to be made between ‘government’ and ‘governance’. Government is the institution itself, whereas governance is a broader concept describing forms of governing which are not necessarily in the hands of the formal government. Corporate governance, for example, refers to how the private sector structures its internal mechanisms to provide for accountability to its stakeholders; and while government may be involved in this through the company law, there are aspects which it does not control. According to Keohane & Nye (2000):

“By governance, we mean the processes and institutions, both formal and informal, that guide and restrain the collective activities of a group. Government is the subset that acts with authority and creates formal obligations. Governance need not necessarily be conducted exclusively by governments. Private firms, associations of firms, nongovernmental organizations (NGOs), and associations of NGOs all engage in it, often in association with governmental bodies, to create governance; sometimes without governmental authority.”

The promotion of good governance is widely accepted as a pre-requisite for development (Sen, 1999). But defining the principles of good governance is difficult and controversial. The United Nations Development Program (1997) enunciates a set of principles that seem to have a universal recognition and are given below:

- Legitimacy and Voice (focus on participation and consensus orientation)
- Direction (focus on strategic vision)
- Performance (focus on responsiveness, efficiency and effectiveness)
- Accountability (focus on accountability to public and transparency)
- Fairness (focus on equity and rule of law)

Governments are specialised institutions that contribute to governance (Riley, 2003). Representative governments seek and receive citizen support, but they also need the active cooperation of their public servants. Governance is the outcome of politics, policies, and programs. Governance is distinct from government in that it concerns longer-term processes rather than immediate decisions. The result of this focus on processes instead of decisions is that the primary concern of governance is ‘goals’ rather than rules (Kettl, 2002). In the perspective of governance what is important is the objective rather than the rules of behaviour for achieving it. Finally, the ‘bottom line’ for governance is outcomes rather than the outputs of government (Osborne and Gaebler, 1992). One simple way of illustrating this point is to word it as follows: whereas the point of government outputs is the effort expended, the point of governance outcomes is the effects produced. One of the reasons people are often impatient with governments is because, despite the reports of great efforts expended, the results produced (the outcomes) are often unacceptable from the point of view of the citizenry. People who want to “re-invent government” (Osborne and Gaebler, 1992), are hoping that those in government will adopt a new focus on outcomes to replace outputs! Those in government often tend to confuse how they govern with why they govern. This is an attempt to replace substantive rationality (outcomes) with procedural rationality (processes). Both are important, but for the public, outcomes are far more important.
**E-governance**, meaning ‘electronic governance’, has evolved as an information-age model of governance that seeks to realise processes and structures for harnessing the potentialities of information and communication technologies (ICTs) at various levels of government and the public sector and beyond, for the purpose of enhancing good governance (Bedi, Singh & Srivastava, 2001; Holmes, 2001; Okot-Uma, 2000). According to Riley (2001), “e-governance is the commitment to utilize appropriate technologies to enhance governmental relationships, both internal and external, in order to advance democratic expression, human dignity and autonomy, support economic development and encourage the fair and efficient delivery of services.”

As a concept, e-governance can be perceived to be contextually inclusive of ‘electronic democracy’ (*e-democracy*) and ‘electronic government’ (*e-government*) (Okot-Uma, 2001). In this context, *e-democracy* refers to the processes and structures that encompass all forms of electronic communication between government and the citizen, such as information, voting, polling, or discussion; thereby enabling citizens to participate in the government’s policy-making (Grönlund, 2001). Specifically, e-democracy involves ‘electronic engagement’ (*e-engagement*): engaging public in the policy process via electronic networks; ‘electronic consultation’ (*e-consultation*) which refers to interaction between public servants and the citizenry and interest groups; and ‘electronic controllership’ (*e-controllership*) consisting of the capability to manage the cost, performance, and services of an organisation electronically (Riley, 2003).

*E-government* commonly refers to the processes and structures pertinent to the electronic delivery of government services to the public. For instance, according to Gartner Consulting, e-government involves the use of ICTs to support government operations and provide government services (Fraga, 2002). However, ‘e-government’ does not only mean the use of all sorts of ICTs by public institutions to improve both their relations with their users and their internal functioning. Though e-government is different from but builds on the administrative reform policies inspired by New Public Management (NPM) implemented throughout the European Union and U.S.A. over the past two decades. However, e-government goes even further and aims to fundamentally transform the production processes in which public services are generated and delivered, thereby transforming the entire range of relationships of public bodies with citizens, businesses and other governments (Leitner, 2003).

Structurally, the ever-dominant “silo” structure of government, with line ministries and functional agencies resulting from intra-bureaucratic conflicts and bargaining, is being increasingly questioned now, both from a financial perspective due to increasing costs of traditional public service provision, and from a societal perspective with a new concern for a de-bureaucratised and citizen-centred public service (Yong and Koon, 2003). Using ICTs as enabler, e-government also aims:

- To improve the performance of public institutions and make them more responsive.
- To help build a (partly) *virtual* and (completely) joined-up administration in which the user has to “knock at the front door” either virtually (electronically) or physically by going to a “one-stop-service counter”.

In summary, e-government is not only modernising public administration through ICTs but it is a key enabler in the building of citizen-centric, cooperative, “seamless”, but polycentric, modern governance (Leitner, 2003).

Within this broad definition, there are the following dimensions which reflect the functions of government itself:

- **E-services**: the electronic delivery of government information, programmes, and services.

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1 Often the terms ‘e-governance’ and ‘e-government’ are used synonymously as in Ministry of Information Technology, Government of India (undated). However, we feel that e-governance involves ICT-enabled governance processes and structures leading to good governance, and e-government constitutes only a subset (though a major one) of e-governance.
• **E-commerce**: the electronic exchange of money for goods and services, such as citizens paying taxes and utility bills, renewing vehicle registration, and paying for recreation programmes, or government buying office supplies and auctioning surplus equipment.

• **E-management**: the use of ICTs to improve the management of government (from streamlining government processes to improving the flow of information within government offices).

### E-governance in Developing Countries

Implications of e-governance are slightly different for developing countries. Whereas public sector reforms or the NPM movement in industrialised countries was internally driven (as in U.K., U.S.A., etc.), in most developing countries the public sector reforms were externally driven, through World Bank and other donor institutions (McGill, 1997). In some countries such as Turkey, there were no pressures to accept these reforms (Sozen & Shaw, 2002). Consequently, in spite of the economic restructuring in many developing countries such as India, the public administration in developing countries still continued to remain highly bureaucratised and extremely centralised (Saxena, 1996).

Another difference between e-governance in industrialised and developing countries is in the available ICT infrastructure. E-government movement in industrialised countries was largely triggered with the availability of Internet technology, through which it became possible to access government agencies remotely and inexpensively. But otherwise for their internal operations, government organisations were already using ICT-based systems. However, in the case of developing countries, the ICT use in public sector was very little, and therefore they had a poor, if any, ICT infrastructure (Bhatnagar & Bjorn-Andersen, 1990; Yong, 2003). Consequently for them e-government’s first stage was the computerisation of their internal operations and services. Thus, for many government departments, ‘e-government’ was a significant infrastructural and expensive change, as they had to plan switching from totally paper-based systems and services to totally computer and Internet-based systems and services.

But e-government is not a short-cut to economic development, budget savings or clean, efficient government. Instead, e-government is an evolutionary process and often a struggle that presents costs and risks, both financial and political (Pacific Council for International Policy, 2002). These risks can be significant (Heeks, 2003). Therefore, if e-government initiatives are not well conceived and implemented, they can waste resources, fail in their promise to deliver useful services, and thus increase public frustration with government. Moreover, e-government in developing countries must accommodate certain unique conditions, needs and obstacles (Heeks, 2001). For instance, they may have poor infrastructure, corruption, weak educational systems, and unequal access to technology.

### E-governance: Techno-centric versus Governance-centric Views

Given the obviously enabler role that ICTs have played in its creation, it is easy to conclude that e-government is primarily a technical exercise rather than a collection of political and social choices involving special technical considerations! Consequently, most interpretations of e-government are techno-centric focusing more on technology use (Bhatnagar & Schware, 2000). No wonder that many of the definitions of e-government (or e-government) emphasise this techno-centric view, as in the following:

“E-government is about improving the efficiency and effectiveness of government by using the Internet and related technologies.”

-Audit Office of New South Wales, Australia (2001)
“Electronic or e-government means providing public access via the Internet to information about all the services offered by central government departments and their agencies; and enabling the public to conduct and conclude transactions for all those services....”


“Government’s use of technology, particularly web-based Internet applications, to enhance the access to and delivery of government information and service to citizens, business partners, employees, other agencies, and government entities.”

-Stowers (2001)

In effect, therefore, the techno-centric view focuses on the technological capabilities and the efficiency derived there from.

**Techno-centric e-governance:**

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<th>Efficiency-driven:</th>
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<td>Technology-enabled</td>
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<td>Output-focused</td>
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<tr>
<td>Operationally efficient (accountable, responsive, and transparent)</td>
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In this view even the implementation of e-government may be considered in phases which are technologically distinct, as given below (Center for Democracy & Technology, 2002):

**Phase I:** Publish – using ICTs to expand access to government information.

**Phase II:** Interact – using ICTs for two-way communication between citizens and government.

**Phase III:** Transact – creating web sites that allow users to conduct transactions on-line.

However, e-governance is much more than just the act of automation (*computerisation*) itself (Saxena, 1995). It implies major socio-economic innovations and politico-administrative changes based on new ICT applications and developments. Thus, to become a meaningful agent of modernisation for public service delivery and modern governance, e-governance must abandon its technological bias and focus on socio-cultural transformations (Leitner, 2003). This is a crucial distinction. While an e-government is an automated government, the reverse does not inevitably hold true. Introduction of automation into the public sector will not automatically create better or more open governance unless it is based on open and democratising principles. ICTs have transformational potential when they are applied to appropriate and specific goals of governance. This transformational potential of ICTs springs from their capabilities to promote active and non-hierarchical information exchange. Unfortunately, divorced from specific and articulated goals, ICTs will not bring about the benefits of e-governance that are so often touted, such as democratisation, efficiency and the transformation of how government works. Inappropriately applied, in fact, ICTs can become a weapon for having a dampening effect on citizenship and democracy. This risk in techno-centric view of e-governance is inherent because use of ICTs is merely a necessary condition for providing good governance, not a sufficient one (Madon, 1994).

Thus, away from techno-centricity, the other view of e-governance is governance-centric (or citizen-centric). Such a view of e-governance focuses more on the outcome or impact of e-governance, rather than merely on its outputs. Or, in other words, the governance-centric view of e-governance focuses more on its effectiveness rather than its efficiency alone.
**Governance-centric e-governance:**

<table>
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<th>Effectiveness-driven:</th>
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<tr>
<td>Technology-enabled</td>
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<td>Goal/purpose led (good governance driven)</td>
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<tr>
<td>Outcome-focused</td>
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<tr>
<td>Operationally efficient (accountable, responsive, and transparent)</td>
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Thus, a governance-centric (or citizen-centric) view may assume that quality for government services is different because either they are universal (e.g. payment of tax) or provided to specific eligible groups (e.g. the unemployed). Therefore, this view has to focus on the capacity of government to serve the needs of diverse groups, including the aged, those with disabilities, those with few or inadequate resources (such as technology access, knowledge of a language such as English, etc.), and those in rural and remote areas (Teicher, Hughes & Dow, 2002).

We call this governance-centric approach to e-governance as ‘excellent e-governance’ (or e²-government, adding an additional e for “excellent”), compared to techno-centric view, which is merely ‘e-governance’. Our aim of this differentiation is only to emphasise that the purpose of e-governance is to achieve/enforce ‘good governance’ and not merely to exploit technology; to achieve/enforce ‘effectiveness’ and not merely ‘efficiency’; and to realise outcomes (desirable impact) and not merely produce outputs.

Oddly enough, even the measurement of e-governance progress is largely based on the techno-centric view. Most of the studies such as those of UNPAN (2001), World Market Research Centre (2001), are variations of the same approach – benchmark governments against each other based on the online availability of a pre-determined ‘baskets’ of services and information. Thus, it is the ‘quantity’ of e-government that is being measured, not the ‘quality’, nor the effectiveness, nor the actual impact on citizens, etc. These studies do inform us about the implementation pace of e-governance: How much do we have it? How fast is it growing? But these studies do not tell much about the results of e-governance: How well is it working? Are we providing online services people actually need and use? Are we getting on our online public investments?²

**The Meaning of Excellent E-governance (e²-government)**

*Excellence* in organisations has been perceived to have the following attributes (Emersen & Harvey, 1996):

- Purpose-driven (i.e. goal-centric)
- Customer (i.e. citizen)-centric
- Process-oriented
- Structure-supported

This to some extent is confirmed by the definition of ‘e-government’ used by the Ministry of Labour and Government Administration, Government of Norway (1999) that defines *excellence in governance* in terms of fulfilment of the following goals:

- Efficient and result-oriented administration

² The only exception is an OECD study currently going on, which has defined five key dimensions of public sector web sites: (i) accountability/openness, (ii) efficiency, (iii) participation, (iv) effectiveness/responsiveness, and (v) citizen-focused government. The results are not yet out, but they would give us some idea about the governance-centric performance of e-governance projects (OECD, 2001).
Government administration shall, to the greatest extent possible, achieve ‘results’ in accordance with stipulated goals, and these goals shall be attained without any unnecessary use of resources. Thus, excellence involves goal-centricity or is purpose-driven.

- **Provide user (citizen) oriented administration**
  Government administration should acquaint itself with the needs and desires of the users (citizens), and adapt its way of working whenever possible in accordance with their desires.

- **Open and democratic administration under the rule of law**
  Government administration under the rule of law shall contribute to ensuring predictability and equal treatment, and emphasising openness and the right of access to information or decision-making in government activities. This statement again ensures that in addition to being purpose-driven, this purpose itself should be governance-centricity to have excellence.

- **Politically manageable administration**
  Government administration shall be an adaptable and flexible tool for implementing Government’s policies. Though not explicitly, but this statement attempts to ensure that the processes and the structure of government (which constitute ‘administration’) should support implementation of Government’s policies, i.e. should be ‘outcome-driven’.

Thus, excellence in e-governance is characterised by exploitation of governance processes, structure and technology to provide an administration, which is efficient, effective (outcome-driven), politically manageable, and open and democratic (governance-centricity). This is essentially what we have called as ‘governance-centric’ e-governance.

**A Case study of ‘Excellent E-Governance’: Transfer of Elementary School Teachers in Karnataka, India.**

In India, transfer of elementary school teachers is a critical process in the management of elementary education as most teachers want to get posted to the schools in the urban areas or close to their own villages (Department of Education, Government of Karnataka, 1999). As the number of teachers looking for transfer is large (close to 2000 in every district in the Karnataka state of India), corruption and influence began playing a lead role in the transfers. Transfers were being affected at several levels – by the District Panchayats, the Deputy Directors, the Joint Directors, the Director of Primary Education, the Commissioner for Public Instruction, and directly by Government through orders of the Minister and Chief Minister. Often one transfer order contradicted another, and teachers obtained orders only to find the posts had been filled up by another teacher. The end result was only that teachers were a disgruntled lot, but more critically, that the needs of schools were often sacrificed.

In order to overcome these problems, a new system of computer-aided counselling of teachers for transfers has been implemented since 1999. The main features of this system are:

- The system corrects the existing imbalances of too many posts and teachers in urban areas to the detriment of interior villages; and keeps the educational needs of children foremost in mind.
- It freezes posts and/or shifts posts where teachers are in excess or where additional teachers are not required.
- It is sensitive to the needs of physically handicapped teachers and women teachers.
- It reduces the trauma of teachers rendered surplus by giving them priority in transfers and placements.

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3 *Panchayat* is a traditional Hindi word referring to five elders in a village who mediate conflict and speak on behalf of all the residents of a village in pre-modern times. The word has been given a formal meaning referring to a body of elected members, the number varying according to the concerned law. This term now refers to the three tiers of local self administration brought in by the 73rd Constitutional Amendment – the highest being the ‘district panchayat’, followed by ‘block panchayat’ and ‘village panchayat’.
• The system is technology (ICT)-aided, teacher-friendly, and gives no scope for any vested interest to creep in.

The first step in the system is the identification of surplus posts and teacher for shifting to schools with shortage of teachers and/or posts. The next step is to create a database of all schools in the district indicating vacancy positions, which includes ‘shifted’ posts. The vacancy database is then published and made available to teachers. The applications for transfer are submitted by teachers, which are then prioritised by the system using the following priority criteria:

1. terminal illness cases
2. physically handicapped cases
3. teachers occupying surplus posts
4. husband and wife cases, where both are in government service but at different places
5. female applicants having less than three years of service remaining
6. male applicants having less than three years of service remaining
7. other serious medical ailment cases
   etc.

After publication of the final priority list the applicants are called for ‘counselling’ based on their seniority in the priority list, and shown the vacancies available on the computer system. The counselling interview takes place in the presence of Deputy Director of Public Instruction and the head of the District Panchayat. A transfer order is immediately issued to the teacher once he/she selects a post for his/her transfer. The system is ‘dynamic’ in that it gets constantly updated during the counselling process so that posts vacated become available to applicants who follow.

Karnataka State’s experience has demonstrated that it is possible to bring about excellence in governance by introducing transparency, openness, fairness and rationalisation. The system is also a very good example of managing workflow between different activities and coordination (between district Panchayat and department of public instruction) to provide governance excellence.

Another Case Study of ‘Excellent Governance”: Gyandoot Community Network in Madhya Pradesh, India.

A community network, christened Gyandoot, was implemented in the Dhar district of Madhya Pradesh state in India. Dhar district has a population of 17 million, with 54% population being tribal and 60% population living below poverty line. The Gyandoot network connects 21 rural cybercafes called ‘soochanalayas’ (kiosks) (Rajora, 2002). Each soochanalaya provides services to about 10 to 15 village panchayats, 20 to 30 villages, and 20,000 to 30,000 population. The manager of the soochanalaya is a high school-graduate entrepreneur who runs these on commercial lines. At the very least, Gyandoot plans to cut out the middleman from the agricultural produce supply chain, as the farmers can find out the best market price and the place where they should sell their produce rather than giving it to the middleman.

People can also send their applications for various certificates and complaints of practically all types at a very low cost of Rs. 10. Thereafter within a period of 10 days or less, they are informed whether the certificate is ready and/or the action taken on the grievance. There is also a fee-based e-mailing facility in Hindi language for social issues like land, child labour and child marriage. Since July 2000, a village auction site has also started for every thing from cows to tractors. Other facilities available are on-line newspaper with local news and employment data, listing of families who are below poverty line and school syllabi.

The Gyandoot network has been very successful because its design focused on building consensus of villagers on key information which all the villagers wanted – rates of agricultural commodities, grievance redressel, applications for certificates, MIS for village council, and on-line linkage of the
primary health center with the Medical College at Indore city, etc. Also the development cost was maintained affordable for the village council using ‘Wireless in Local Loop’ (WLL) technology.

The implementation of Gyandoot system is also process-oriented through its back-end linkage with the district offices, which have become more responsive to village communications and transactions. Also the implementation involves good coordination management between the village Panchayat and district government.

**Issues in Bringing Excellence to E-government Applications**

Bringing a governance-centric focus, though very much desirable, is often difficult as it requires addressing a number of critical issues, some of which are given below:

- **Defining a citizen-centric or governance-centric vision** for the e-governance projects. Often e-governance projects lack a clear vision in terms of their effectiveness focus, and are treated merely ‘computerisation’ projects for service efficiency.

- **Developing a process-oriented view** of government work. Government work is generally performed through vertical and rigid ‘silos’ of departments (or agencies), that get on with their jobs without any collaboration between them. Such a fragmented view of government work results in mere computerisation of individual or a few of the activities in individual departments rather than of the end-to-end integrated work process which is necessary to promote effectiveness and governance-centricity.

- **Developing a performance management system** for efficient and effective service delivery, which continuously measures and monitors service performance. Since such a measurement system also focuses on service effectiveness, it also ensures that the service outcome is aligned with the governance-centric vision.

- **Defining a flexible technology architecture**, which is secure, provides easy access to users, scalable for high volume operations, as well as cost effective for the government. Many of the vendor-driven solutions for e-governance are rigid and/or poor in one or more of these dimensions and therefore not appropriate in the long run.

Thus, implementing ‘excellent e-governance’ is a reform process, and not merely the computerisation of government operations. That way only it will contribute to building an “information society” in which the lives of the citizens are empowered and enriched by access to information and the social, economic and political opportunities that it offers. Consequently excellence in e-governance is rapidly becoming a key national priority for all countries, rich or poor, developed or developing.

**E-Governance Engineering – A Methodology for Excellence in E-Governance**

How do we ensure that the above three elements of excellent e-governance – operational efficiency, effectiveness (outcome-driven) and governance-centricity – are always included while planning, designing and developing e-governance applications? In the past, during the NPM era, lot of work has been done on performance measurement in public sector including service quality and performance monitoring, but it was never integrated with the design and development process of e-governance services (Boland & Fowler, 2000; Carter, Klein & Day, 1995; de Bruijn, 2002). There has also been lot of work on improvement and redesign of e-governance processes, but it has never been linked with the performance measurement issues (Saxena, 1996; Osborne & Gaebler, 1992; Osborne & Plastrik, 2000). One of the ways of ensuring this integration is to formulate a comprehensive methodology for planning, designing and implementing e-governance services and systems. There have been some
attempts in formulating e-governance methodological frameworks by Gartner Consulting (Fraga, 2002), Pacific Council on International Policy (2002), and Zeppou & Sotirakou (2003). But all these are only conceptual frameworks for e-governance planning and do not include design, development and implementation aspects of e-governance services.

Therefore, there is an urgent need for a comprehensive methodology for planning, designing and implementing e-governance services, which should be able to accomplish the following:

- Ensure excellence by being governance-centric as a goal.
- Facilitate performance measurement planning and design, and help it embed within the service delivery system.
- Ensure that the system supports the broader end-to-end e-governance process (which may involve several departments or agencies).
- Help design a technology architecture, which matches with the business process architecture and functionality.
- Facilitates planning and design of performance monitoring and concurrent auditing of the entire governance process, and help it embed within the service delivery system.

One such methodology, called the ‘e-governance engineering’ (EGE) is under development by the author and his colleagues (Saxena, in preparation). The methodology achieves the desired integration through the following stages (Fig.1), and the activities involved in each of these stages:

1. **Planning**
   - Establish commitment and governance procedures
   - Identify stakeholders: users (citizens), politicians, bureaucrats
   - Define and review current mission and values for the government agencies involved
   - Identify governance issues – efficiency, effectiveness and governance-centricity – through engagement with stakeholders
   - Determine e-governance process scope and structure needs

2. **Definition**
   - Define and map e-governance process architecture
   - Define performance indicators for efficiency, effectiveness and governance-centricity
   - Collect information about performance in respect of the indicators identified
   - Measure and analyse indicators, and set indicators improvement targets
   - Analyse process performance gaps and prioritise processes for improvement/ redesign
   - Define e-governance business and technology architectures

3. **Implementation**
   - Develop process improvement/ redesign projects plan
     - For each project:
       - Model and analyse process
       - Design process for improvement/ redesign
       - Develop resources for the improved/ redesigned process
       - Manage the transition to the changed process

4. **Evaluation and Management**
   - Monitor process performance and report
   - Audit process and performance reports
   - Communicate reports and obtain feedback
   - Establish and embed systems for creating ongoing performance monitoring and improvement
Benefits of Using E-governance Engineering Methodology

The e-governance engineering methodology has some built-in advantages, which lead to excellence. First, it is a top-down methodology, which starts with the outcome or the purpose of the e-governance application itself, which in turn drives the entire development process. Second, the entire e-governance process is designed along with its performance analysis as well as architectural support. Consequently, there is hardly any chance that after the process is implemented, it may not meet its performance requirements. Finally, the performance is concurrently monitored as well as process is audited, to make sure that the process performance meets its efficiency and effectiveness goals.

Conclusion

In spite of the promises of e-governance, many of the e-governance initiatives in many countries have not been able to deliver them. Often this is because the implementation of e-governance applications suffers from the common drawback of treating it as a techno-centric project and loosing track of the ‘governance’ (or excellence) focus. This paper has identified the characteristics of a governance-centric approach and has proposed e-governance engineering methodology for developing and delivering excellent e-governance applications. The methodology is being planned to be evaluated in some government organisations both in India as well as in Europe. The results of evaluation will be disseminated as soon as they are available.
REFERENCES


UNDP (1997) *Governance and Sustainable Human Development*.


**Biographical Information**

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