

GOVERNMENTS IN THE DIGITAL ERA AND HUMAN FACTORS IN E-GOVERNANCE

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Recent developments brought about by a rapid spread of the Internet, growth in pervasive computing, and sophisticated new digital technology, have turned the globe into an increasingly interconnected network of individuals and organisations, communicating and interacting with each other through a variety of channels. These Information and Communication Technologies (ICT) are bringing about fundamental changes in all spheres of human activity - be it in the field of commerce, education, health or governance. Governments around the world are incorporating the technology into their functioning so as to reduce costs, provide better service to citizens and be better positioned in a globally competitive world. Increasingly however, the realization is growing that successful e-Governance is more about human factors in administration and less about technology.

I. INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS)

Early communication by gestures was replaced by the spoken word which gave way to the written or print revolution, and now the new digital language is being hailed as the fourth generation language. It is, in essence, the ability to create, transmit or store sound, text, pictures etc., in 'bits' of coded signals as "1"s (on) or "0"s (off). This new language has brought about the digital revolution and, as in all revolutions, it is the harbinger of great changes. Being digital has tremendous advantages over the earlier analog systems. The first is that bits can be mixed up and used together or separately, with its real power lying in interaction and translating freely from one to the other. Multimedia is one such mixing of Audio and Video and Data bits and has led to developments such as 'virtual reality' which is more 'real' than reality! A second important development is a new kind of bit that tells us about other bits. These 'label' bits have tremendous potential in being able to prescribe and select information designed to individual choices. Digital

'agents' can be set-up to filter out, sort out, prioritize and manage the flow of information on behalf of the individual. A third advantage is that digital data lends itself to compression and processing by computers as well as transmission over high-speed communication networks with complete accuracy.

The development and rapid growth of the Internet, a vast network-of-networks, has made possible the transmission of information across the globe much like the telegraph of the old days. In this case, however, the uniqueness lies in the fact that the Internet can transfer vast amounts of information, including multi-media applications like movies, instantaneously and at negligible cost. The first and most important Internet application, e-mail, emerged in the early 1980's and has superseded all other communication media like telephone and fax. This application is equivalent to the postal service but is very fast, reliable and cost effective. The second important application that evolved in the late 1990's was the World Wide Web (WWW). Here standardised tools and software allowed non-technical users to find, display and communicate text, graphics, voice and video located on the Internet. WWW thus incorporates all of the Internet services mentioned above and much more. Not only is it a means to publish multimedia, hyper-linked information which can be stored on any number of systems located anywhere, it can also be used for interactive applications involving payment based transactions (e-Commerce) and government-citizen services (e-Governance). This, in turn, has also made possible the generation of a service at one place and its use or consumption at a place remote, both in terms of space and time. E-Governance runs on the above basics with information and logic residing in large databases that are connected to points of access over the Internet (or a dedicated line which is more expensive). It is thus possible to avail services 24 hours/day and 7- days a week.

A third parallel development has been the vast increase in computing power and memory capacity along-with falling prices that have brought about pervasive computing. This has ensured that today a palm-sized device is

more powerful than a roomful of electronic gadgets twenty years ago. These three technological developments have brought about a convergence of communications, computers and content, where the TV can be an Internet access device and a computer can be used to watch movies and play music.

II.GOVERNANCE IN THE 21st CENTURY.

The last two centuries have seen the evolution of government structures as we now know them. From the feudal structures that concentrated on defence and collection of revenues with some involvement in education and health, governments grew to handle the complexity of the Industrial Revolution and were influenced by the prevailing political philosophies and the needs of the welfare state. Some newly independent countries, in an attempt to hasten the process of industrialization, followed the Soviet model of a planned economy and interventions in all sectors of the economy. That era saw the emergence of 'Big Government' based on the 'Command and Control' model with strict formulae of span of control, specializations, checks and balances, etc. These structures became characterized by rigid jurisdictions, detailed and time consuming processes, much paperwork and file handling. The bureaucracies operated vertically rather than across Government with rules and procedures added to layers and layers of staff. It incorporated an explicit system of control and approvals, often with awkward reporting mechanisms and manual financial transactions.

International developments in the latter half of the 20th century have had a major impact on governance. The end of the Cold War saw the liberal availability of aid for developing countries vanishing, as the super-powers no longer vied with each other to entice countries to their particular camp. Shrinking budgets encouraged a move towards downsizing and privatization. With wealth increasingly being created by large Multi-National Corporations (MNCs), competition started between countries to attract them through subsidies and better service. In addition, the expectations of the customer-citizens underwent a shift demanding service in tune with what was

happening in the business world. Why could not government services be accessible 24/7 like the Automatic Teller Machines (ATM)? A mature private sector has enabled business process outsourcing and public-private partnerships, while a technologically mediated world made possible self-service delivery and Government 'on-line' not 'in-line'.

Taking note of these changes the agenda for governments has also undergone a change. 'The State in a Changing World' in the World Development Report (1997) identifies the core competences of Governments to include:

- Establishing a structure based on law;
- Maintaining a healthy policy environment;
- Investing in basic social services and infrastructure;
- Protecting the vulnerable; and,
- Protecting the environment.

These priorities would alter the agenda in the 21st century for Governments to work towards economic competitiveness, provide digital service to citizens, encourage e-communities and digital democracy, while continuing to upgrade education and equip citizens for the 'knowledge century'. There is need to take stock and Re-invent Government by

- Re-thinking the Goals of Governance;
- Re-assessing the Organisation and Culture;
- Re-engineering the Business processes; and finally,
- Implementing New Government.

In such a scenario, revolutionary benefits could be derived by all sections of society: -

- Citizens, in their interaction with Government agencies, would have greater awareness of services and priorities, a wider choice of channels, greater convenience, lower costs, more personalized service, and consequently greater participation and openness in the democratic process.

- Businesses would benefit from quicker and faster interactions that reduce transaction costs and regulatory burden. With e-procurement there would be even greater benefits through better inventory management and a shared data environment.
- Other government departments would benefit by such a shared data environment through reduced costs, greater accuracy and efficiency, and better use of the knowledge base.
- The greater openness and transparency would benefit the whole economy by attracting Foreign Direct Investment (FDI) as a result of the country rating improving in the various 'E-Readiness' surveys. Local industry would also be made more competitive in a global scenario by bringing in productivity and efficiency improvements.

Government as we know it, would also undergo a consequent change with 24/7 working, flexi time for employees, flatter organisational hierarchies, clear benchmarking of performance and higher accountability, and, lower quantity but higher quality of governance as the norm. In short, a vision directed, citizen focused, flat, empowered, global, networked and electronic government.

Many countries in the world have taken notice of these developments and have utilized the technologies to further their national vision. The position in some countries is briefly mentioned below:

Australia has formulated their vision "to be a world leader in government administration and in the cost effective provision of affordable, equitable and accessible Australian government information and services". Towards achieving this vision, they have worked out a Framework Strategy involving setting up an 'On-line Council' and drawing up a route map for strategic policies by Federal and State Governments. They have issued common standards and guidelines centrally, which are mandatory. Targets have been set for electronic delivery of services and joined-up delivery of

government services (called Maxi) have been started in partnership with private agencies.

Canada has adopted a vision of “Government services that are affordable, accessible, and responsive.” Their key initiative – ‘Connecting Canadians’ - has put in place the necessary strategies and initiatives, security, standards based secure architecture for all departments, etc., ‘Service Canada’ initiative is built around a single portal to integrate services in strategic sectors (education, employment, health, procurement, social security).

China: Central and local governments have integrated ‘informatisation’ with their economic and social development plans and made it a strategic move towards prosperity. They plan to deliver 80% of administrative services via the Internet by 2005 and are addressing issues of necessary infrastructure, creating a domestic information industry and bridging the “digital-divide” between their less developed and more developed regions in the country.

Singapore has a vision to “transform Singapore into an Intelligent Island, where the use of information technology is pervasive in every aspect of its society - at work, home and play.” Their e-Governance initiatives started way back in 1981 and today the Singapore ONE network has provided high bandwidth to 99% of the citizens. The e-citizen centre, a portal to public services started as a pilot and has expanded into ‘Public Service Online’ and today over 130 services are on-line (with a potential of over 500). The traditional counter services continue along side to prevent any “digital divide” issues especially for their senior citizens.

UK: “The UK aims to be the best place in the world for electronic commerce by 2002.” Towards this they have developed a UK Government Portal with single-point access to Government and various services. A new office of e-Envoy with a budget of GBP 2 billion and 200 employees has been established to oversee the process and is answerable directly to the Prime Minister. They have a target of putting all services on-line by 2005.

Thailand has a vision “to exploit the potential of ICT to strengthen the country’s economic competitiveness, reduce poverty, and achieve sustainable

development". To achieve this they have put in place a 'National IT Council' chaired by the P.M. A comprehensive e-Thailand initiative having six aspects has started one of which is e-Governance. The e-Governance plan is in four stages: providing on-line information, enabling simple transactions, establishing a payment gateway and finally, e-Procurement.

III. HUMAN RESOURCE ISSUES IN E-GOVERNANCE

The single most significant learning from successful e-Governance projects is that, though the tendency has always been to give over 60% weightage to technology as contributing to a successful application, technology plays a very small role in the successes. Reality checks indicate that technology makes up less than 15% in such successes and the crucial critical factors are management of change and process re-engineering in the bureaucracy. These together account for about 80% of a successful project. And, as in any endeavour, 'Lady Luck' also plays a 5% role.

The reason for reality to be so far from what is expected is not far to seek. Governments work in a monopoly situation and there is no pressure of facing competition that can induce change. There are often no benefits and incentives to the individuals to improve the current state of affairs. The stiff resistance to change from people who make up the bureaucracy is a critical factor in the success of e-Governance initiatives. People resist change for a number of reasons, including fear of the unknown, reluctance to make the effort involved, upsetting a well established routine, fear of failure, lack of confidence in the change implementers, lack of proper communication but possibly, the most important reason is the fear of being worse off afterwards. In our context, where information is power, making information freely available has serious implications on dynamics of the bureaucracy.

The human resource requirements for successful implementation can be examined at three levels. These are:

- i. The requirements at highest levels of Government;

- ii. The requirements at the level of employees in Departments/Ministries; and,
- iii. The requirement at the level of actual implementation.

These are examined in the succeeding paragraphs.

At the Highest Level

Because of this stiff resistance to change there has to be a 'Vision' and political ownership at the highest level for any initiative to succeed. Only such a commitment can bring about the necessary momentum in overcoming inter-departmental rivalries and bureaucratic hurdles that are encountered in the process of implementation. There is need for exposure at these top levels of government to the potential and limits of the new technology. Since the exercise far exceeds one-dimension and extends to Government as a whole, understanding and commitment are a vital ingredient. The political ownership gets reflected in the Leader taking the responsibility and finding the resources to take the initiative forward. He requires great perseverance to overcome hurdles that are bound to come in the way. A 'National IT Council', as has been done by Thailand and Australia, under his chairmanship could be set-up with buy-ins from the major stakeholders where the 'Vision' is translated to a Strategy. This would incorporate the national priorities of the e-Governance exercise. These could be better citizen services, or reduction in size of the bureaucracy, or greater efficiency through work flow automation and faster access to information and experience.

The 'National IT Council' would initiate the various steps required for improving functioning and delivering better citizen services. The first step would be to decide WHAT we want to do. What are the key issues and concerns we would like to address and which are the critical applications that have a high impact? The answer in the short term could be to get connected and expand services. In the long-term, the investments would have to be justified and revenue-generating applications selected. The next step would be to decide for WHOM and whose benefit are these initiatives being

developed. Are they for Government Agencies/employees through automation and lower cost? Are they for better effectiveness and citizen services? Are they to improve the economy and competitiveness? These questions would need to be answered before the next one, which is HOW do we want to achieve the objective? This would involve deploying necessary computing and networking infrastructure, establishing standards across the Government system, and evolve and automate Government processes, and revise necessary policies.

Having addressed these issues governments have taken a phased approach to using ICTs in their functioning. The initial steps have been to develop a web presence and make available information of every conceivable type through a content - rich website. This would progress to conducting simple transactions like form filling and query response systems over the Internet and thereby do away with the drudgery of visiting Government offices. Finally, in its fully developed form, the web presence would be a Portal incorporating a payment gateway and e-Procurement.

Since political ownership is vital, a Minister could be entrusted with the responsibility of implementation as has been done in the United Kingdom. Here the e-Envoy, as he is called, reports directly to the Prime Minister and has his authority to oversee implementation. The sheer size of the exercise requires a dedicated organisation under the e-Envoy to assist him in implementation and put in place the required infrastructure and prescribe relevant IT architecture and standards. Such an organisation would also act as a bridge between the user departments and application developers.

The broad understanding of the concept as a whole is a pre-requisite to the implementation of e-Governance and realization of the benefits of e-Governance. The top officials within a department would be the driving force of e-Governance initiatives. Thus, it is very critical that they have a clear understanding of definition and scope of e-Governance. Very often the exact meaning of e-Governance is not comprehensible among the departments and

each defines it to suit their purpose with a degree of vagueness. This has to be overcome by the government by taking initiatives towards standardization and a clear definition of e-Governance that takes into account the scope of functions of individual Ministries and Departments is suitable for all. This would give a clear idea of the concept and would serve as a precursor to all the initiatives of e-Governance. This would also help in laying down goals for implementation of e-Governance within the separate Ministries and Departments.

At the level of Departmental Employees

The second pillar in the e-Governance framework is the People factor. The employees within the Department/Ministry have a vital role to play in e-Governance for it is they who drive the initiatives. Needless to say, the better trained the employees are, the easier it is to deploy them and to handle infrastructure and implement automation of processes. This factor is a key component from the planning to the execution stage in the e-Governance initiatives. It calls for creating awareness of various applications that can be done using ICT infrastructure.

It also calls for an adequate level of computer knowledge among the employees of the Ministry/Department. Computer knowledge of employees is a pre-requisite before any e-Governance initiative is undertaken because currently all functions are undertaken manually and they would be shifted to the electronic form only if people involved in it have sufficient knowledge of using computers. Computer education should be the first step towards driving IT in various processes of the Ministries/Departments. There is a need to communicate the benefits of using ICT in day-to-day work. A major challenge is to train their workforce so that they use computers for majority of their tasks. Since 'resistance to change' is a key barrier in imparting IT education at the ground level, there should be a positive reinforcement from top management to push computers in the habits of employees by introducing reward schemes for using computers in their day-to-day life. Since such

training is of great importance, IT Training Wing should form a critical component of an Annual IT action for all Ministries/Departments. These training programmes need to be monitored on a continuous basis to ensure that employees are exploiting the IT resources. A well-documented policy is a pre-requisite for having any training and development programme that would smoothen the training exercise in any ministry.

At the level of Implementers

Once the ministries and departments have a clear understanding of the concept of e-Governance, they also need to build a strong building block for e-Governance. This building block of IT should be considered as a prime functional area and the entire functionality of the Ministry/Department should assume IT as a core function. An official at the top level could be appointed to take care of IT and monitor it regularly. The designation and status of the IT Manager should be such that he has the power to force people to change their mindsets. The IT Managers should be of sufficient senior level so that the organisation can leverage their position as IT Managers as they have the power to make policies at their department level and also have people under them who can be assigned the task of monitoring it on a continuous basis. It is very important for the IT manager to have a separate task force whose focus is concentrated on achieving the goals of e-Governance: which are speed, transparency and easy access of services by the citizens. This team would encompass domain knowledge and technical skills. The spread of IT initiatives in the department is also directly or indirectly dependent on the number of people responsible for it: the more the number of people assigned this role, the faster would be its adoption among the workforce. More numbers would lead to better training, continuous monitoring and innovative ways of working.

Specialised IT training programmes are also necessary for running new software, new IT projects, high end customized software etc. It would also include training on using Internet, personnel and financial packages.

Web based interaction is also considered as a critical step towards e-Governance. Therefore, it is important for employees to understand various applications of Internet. Specialised IT training policy should also occupy some space in the IT action plan for the ministry. These training programmes should be directed to those who would be involved in operating the high-end customized software. The thumb rule to adopt is “impart specialized training to all those who require it”.

IV.IN CONCLUSION:

Donald Tapscott, the guru of the digital age, has put it succinctly when he writes in his book ‘The Digital Economy’ that “Governments are central players in the new economy. They set the climate for wealth creation. They can act as a deadening hand in change or be the catalyst for creativity. They can cause economic stagnation or they can set a climate for growth”. To achieve similar goals Governments have to be reinvented and that involves changing the mindset of people in the Government, training and arming them with the necessary tools to be able to take advantage of the immense possibilities brought about by the Digital Age.

Readings:

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