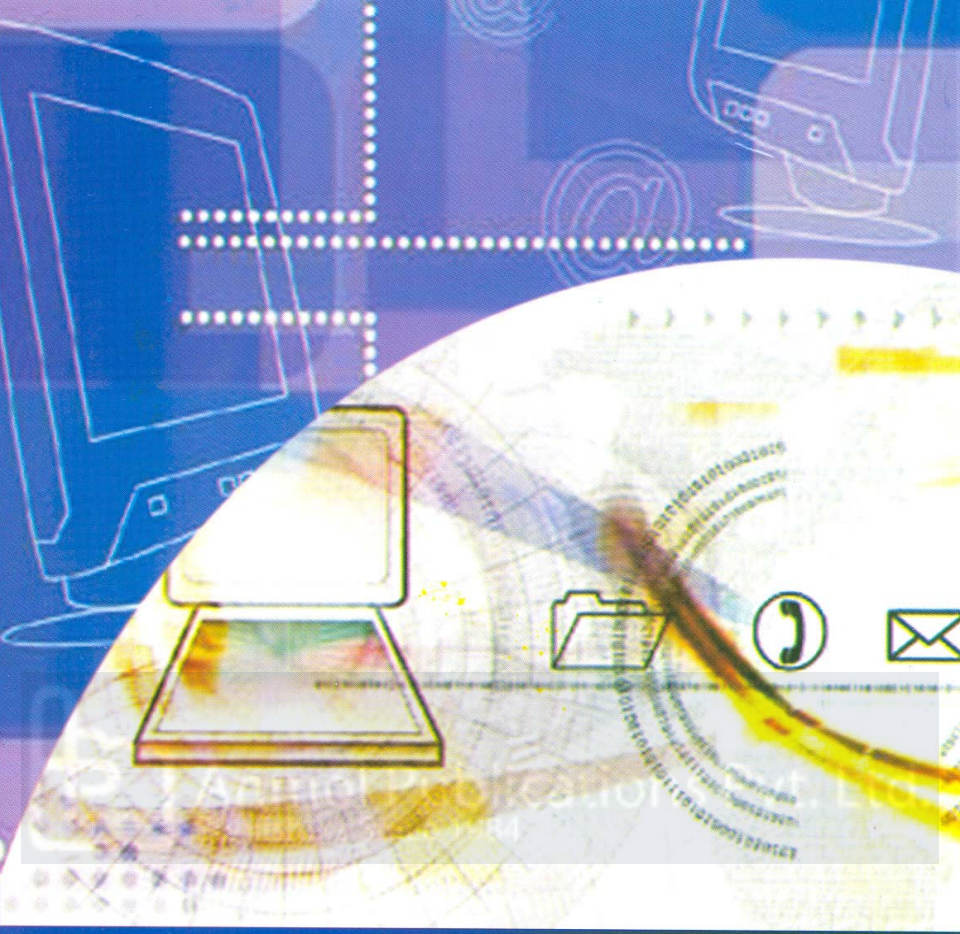

E-GOVERNANCE

PERSPECTIVE AND CHALLENGES

VISHWAS TRIPATHI

E-Governance : Perspective and Challenges

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Preface

While the focus and purpose of e-government globally remains the same, the implementation and successes of digital governance vary widely from country to country.

To learn more about the true potential of e-government, a re-evaluation of the processes is necessary in order for e-government to continue to be accepted in the mainstream and be a more efficient system of government with access by all. If the models that were first introduced continue to be improved upon, e-government in our knowledge society will be an open and transparent institution that provides a maximum of services with a minimum of intrusion in the lives of the users.

Overall, while the basic goals of e-government have not shifted, the vision and responsiveness of the system have been forced to adapt globally in order to fulfill the public's need. Instead of a broad-based program to seamlessly interweave government workings with information technology, nations around the world now are struggling to implement Internet access, e-government interests and most importantly, safe and effective programs that serve society more efficiently.

Ravi Upadhyay

1

E-Governance Status in the World

We put "e" in front of "government" to recognise that a public administration, is in the process of transforming its internal and external relationships with the use of modern information and communication technology (ICT). ICT is about communication among people: the quintessence of human society. We have always used communication to inform, learn, define concepts and viewpoints, deliberate and reach agreements, in private and in public life. One can put the electronic features of modern ICT into this timeless communication process and benefit from doing so. If this is done in the context of public administration, it is bound to have an impact on the creation of public value. Indeed, e-government at its best can be viewed as the process of creating public value with the use of modern ICT.

The notion of public value is rooted in people's preferences, as only the public can determine what is truly of value to its members. It is also rooted in the ability of government to create things that people want. Outcomes of the development process that improve people's quality of life, laws that are necessary and just, services that meet the people's needs, fairness, equity, due process, trust and confidence in government that stems from perception of its overall performance are all things that people want and value. They pay for them with resources and powers that they give up and in exchange they expect the government to be instrumental in producing public value. (If proper ethical values-and especially the value of human solidarity-are in place, this trade-off does not yield to minimalist

interpretation: people are known to have surrendered some of their individual liberty to promote, and benefit from, the common good.) From this point of view, e-government is justified if it enhances the capacity of public administration to increase the supply of public value, i.e. the things that people want. This model of inter-relationships among the people, government and public value- if applied to analysis of e-government-is simple and straightforward. People express preferences, the government uses ICT to enhance its own capacity to deliver what people want, and eventually a public value-the outcome of a high quality of life-is created. In real life this model is often difficult to apply and maintain. A recently conducted global survey has indicated that two-thirds of the people think that their government does not represent them, do not trust their government and feel that their country is not governed by the will of the people.

What went wrong? First, a parallel track may appear. Private, not public preferences are expressed, the government delivers and outcomes are produced that may or may not increase the quality of people's lives. We know enough about the reasons behind government failure to understand that within this scenario a government can engage in actually destroying public value. The self-serving behaviour of politicians and civil servants and/or the capture of public agencies by narrow interest groups are most often behind such an outcome.

E-government is justified if it enhances the capacity of public administration to increase the supply of public value, i.e. the things that people want. "A true measure of the State is not its "size", but rather the nature of the functions that it performs, and the efficiency and effectiveness with which it performs them."

Second, people's preferences may not be articulated clearly. Again, this is bound to lead to the production of outcomes that may or may not increase the quality of people's lives. While this subject will be discussed, several facts warrant mentioning here. Inequalities of status (related to income, gender, religion, ethnicity etc.) continues to exclude sizeable minorities, and occasionaly majorities from formulating their preferences

publicly. Additionally, in the hassle of everyday life, people tend to suspend their judgement for longer than seems prudent, acquiesce and accept the formulation of preferences on their behalf by experts within or outside government. This substitution, even if performed in good faith, may or may not result in the capture and articulation of the real preferences of the public at large. Additionally, in a society and economy that is increasingly driven by technological innovations, people have to deal with a difficult trade-off between convenience and/or the efficiency that a technological innovation brings and the changes in the social context that it imposes. In this bargain, human values, desires and rights are being put into play alongside development objectives and the claims on the social environment that a particular technology would make. Frequently, experts make these trade-offs on people's behalf. If people make them directly, at least initially, they often act on the basis of incomplete information. If commercial interests are involved, the information available to the public may have been processed by the culture industry. Let there be no doubt about it: historically, technological innovations have resulted in a vastly improved quality of life. Nevertheless, especially from a long-term perspective, some of the trade-offs seem unfair and the currency that people use in these "transactions" diminishes the stock of the things that they value. All this is a source of legitimate concern.

Top Ten E-Democracy "To Do List" for Governments Around the World

Governments around the world have an exciting opportunity. We can revitalise our spirit of many democracies and build an e-government that fundamentally connects with the people and rebuilds the legitimacy of governance. The Internet, if used with democratic intent and spirit can and will bring people closer to their governments. We can break down the "us" versus "them" mentality and embrace the miracle of government as the one institution the people jointly own in their local communities, regions and nations.

This started with the Mennestoa's government online efforts (1994-97). Today, it is even more urgently required for

transparent governance and sponsored e-democracy activity in every government office, agency and Programme. To help us get started I have drafted the "Top Ten E-Democracy "To Do List" for Governments Around the World." It is up to us to:

1. Announce all public meetings online in a systematic and reliable way: Include the time, place, agenda, and information on citizen testimony, participation, or observation options. Use the Internet to build trust in-person democracy.
2. Put a "Democracy Button" on your site's top page which brings them to a special section detailing the agencies/ government units purpose and mission, top decision-makers, links to enabling laws, budget details and other accountability information. Share real information that help a citizen better understand the legitimacy of government agency and powers. Give citizens real information on how to best influence the policy course of the agency. This could include links to the appropriate parliamentary or local council committees and bodies.
3. Implement "Service Democracy." Yes, most citizens simply want better, more efficient access to service transactions and information products your agency produces. Learn from these relationships. Actively use comment forms, online surveys, citizen focus groups to garner the input required to be a responsive e-government. Don't automate services that people no longer want or need. Use the Internet to learn about what can do better and not just as a one-way self-service tool designed to limit public interaction and input.
4. End the "Representative Democracy Online Deficit." With the vast majority of government information technology spending focused on the administrative side government, the representative institutions from the local level on up to the Federal government are growing increasingly weak. Invest in the technology and communications infrastructure of those institutions designed to represent the people. Investing in elected officials' voice through technology is investing in the voice of the people. Cynicism

aside, options for more direct democracy can be explored, but invest in what we have today-representative democracy.

5. Internet-enable existing representative and advisory processes. Create "Virtual Committee Rooms" and public hearings that allow in-person events to be available in totality via the Internet. Require in-person handouts and testimony to be submitted for immediate online availability to those watching or listening on the Internet or via broadcasting. Get ready to datacast such items via digital television. Encourage citizens to also testify via the Internet over video conferencing and allow online submission of written testimony. The most sustainable "e-democracy" activities will be those incorporated into existing and legitimate governance processes.
6. Embrace the two-way nature of the Internet. Create the tools required to respond to e-mail in an effective and timely manner. E-mail is the most personal and cherished Internet tool used by the average citizen. How a government deals with incoming e-mail and enables access to automatic informational notices based on citizen preferences will differentiate popular governments from those that are viewed as out of touch. Have a clear e-mail response policy and start by auto-responding with the time and date received, the estimated time for a response, what to do if none is received, and a copy of their original message. Give people the tools to help hold you accountable.
7. Hold government sponsored online consultations. Complement in-person consultations with time-based, asynchronus online events (one to three weeks) that allow people to become educated on public policy issues and interact with agency staff, decision-makers, and each other. Online consultations must be highly structured events designed to have a real impact on the policy process. The biggest plus with these kinds of events is that people may participate on their own time from homes, schools, libraries and workplaces and greater diversity of opinions,

perspectives, and geography can increase the richness of the policy process. Make clear the government staff response permissions to allow quick responses to informational queries. Have a set process to deal with more controversial topics in a very timely (24-48 hours) fashion with direct responses from decision-makers and top agency staff. Do this right and your agency will want to do this at least quarterly every year,, do it wrong the first time and it will take quarter of a century to build the internal support for another try. Check on the work in Canada, The Netherlands, Sweden and United Kingdom in particular and you'll discover government that are up to some exciting work.

8. Develop e-democracy legislation. Tweak laws and seek the budgetary investments required to support governance in information age. Not everything can be left voluntary – some government entities need a push. What is so important that government must be required to comply? There is a limit to what can be squeezed out of existing budgets. Even with the infrastructure in place the investment in the online writers, communicators, designers, programmers, and facilitators must be increased to make Internet-enhanced democracy something of real value to most citizens and governments alike.
9. Educate elected officials on the use of the Internet in their representative work. Get them set-up technologically and encourage national and international peer-to-peer policy exchanges among representatives and staff. Be careful to prevent use of this technology infrastructure for incumbency protection. Have well designed laws or rules to prevent use of technology and information assets in unknown ways. Don't be overly restrictive, but e-mail gathered by an elected official's office shouldn't suddenly be added to a campaign e-mail list.
10. Create open source democracy online applications. Don't waste tax money on unique tools required for common governmental IT and democratic needs. Share your best

in-house technology with other governments around the world. Leverage your service infrastructure, be it proprietary or open source, for democratic purposes. With vast resources being spent on making administrative government more efficient, a bit of these resources should be used "inefficiently." Democracy is the inefficiency in decision-making and the exercise of power required for the best public choices and outcomes. Even intentional democratic inefficiency can be made more effective with IT.

Building blocks of e-government: E-government is about changing how governments work, share information, and deliver services to external and internal clients. It harnesses information and communications technology to transform relationships with citizens and businesses, and between arms of government. Benefits can include reduced corruption, increased transparency, greater convenience, higher revenues, and lower costs. But case studies show that these benefits do not result solely from the use of information and communications technology. Instead, e-government initiatives should be part of broader reforms to improve public sector performance.

Delivering services to citizens: E-government can benefit citizens by reducing delays, consolidating multiple services under one roof, eliminating the need for frequent visits to government offices, and containing corruption. In addition, publishing rules and procedures online can increase transparency. Moreover, because poor people bear the largest costs of administrative inefficiency and corruption, delivering services through rural kiosks leads to their economic and social empowerment. For example, 7 million farmers in Karnataka, India, can now obtain printed copies of land titles (needed two or three times a year to secure bank loans) online in 10 minutes at 177 government-run departmental kiosks or at privately operated Internet kiosks. The fee is 15 rupees. Under the previous titling system two-thirds of The World Bank from the development economics vice presidency and poverty reduction and economic management network users had to pay bribes of 100–2,000 rupees, but only 3 percent of users of the online system report paying bribes.

Delivering services to businesses: Businesses often face significant administrative roadblocks when interacting with government. Electronic delivery can shorten the turnaround on license applications from several weeks to a few days. Rules can be made transparent and consistent across departments. Transaction costs for both businesses and government can be reduced. And government can benefit from more efficient revenue collection. In Guatemala, for example, 9,000 taxpayers file taxes through BancaSAT, an online platform managed by the Guatemalan Tax Agency (SAT). BancaSAT contributed to a 13 percent increase in SAT revenue between 2000 and 2001.

Increasing Efficiency: E-government can lead to higher productivity. Governments can cut staff or redeploy workers in more productive tasks. Data captured by an electronic system often enables more frequent and accurate data sharing across departments, closer monitoring of employee productivity, easier identification of pressure points for delay and corruption, and improved compilation of historical data that can be mined for policy analysis. For example, Karnataka's Department of Public Instruction has realised numerous efficiency gains from online processing of teacher transfers. Each year the department receives 10,000–15,000 applications from eachers requesting to be transferred. The process used to be riddled with corruption and nepotism, but today requests are prioritised using well publicised criteria, and teachers are asked to make their choices online— enabling transparency and reducing bribery. Transfers are now processed in a brief period during school vacations, avoiding the year-round disruption caused by the previous system.

Industrial and developing countries take very different approaches to e-government applications. In industrial countries the delivery model is based on self-service through the Internet, while in developing countries it is a hybrid of automated and manual processes. An increasingly popular model is being used in Bahia, Brazil, where citizen assistance service centres integrate federal, state, and municipal agencies in a single location. The centres are in convenient locations (such as shopping malls and major public transportation hubs), offer

tremendous time savings, and deliver services with courtesy and professionalism. The centres also reduce overhead costs for government because most agencies pay much less than they did for previous properties rented to interact with the public. Although business owners must still go to a government office to register a new business, registrations can be renewed in just minutes at a citizen assistance centre or over the Internet.

Orchestrating a National Effort

To ensure effective coordination of inter-departmental initiatives, many countries have opted for centralised implementation of e-government efforts. This approach is more likely to succeed in small countries such as Dubai, Jordan, Mauritius, and Singapore. But for most developing countries, where manual processes remain the norm, a centrally driven strategy is complex and one of the key questions is countries' readiness to implement e-government difficult. Thus many countries are trying to decide which strategy is best: central or departmental. In choosing the right approach, an associated concern is the size of budget allocations. Centrally driven initiatives tend to be expensive. Canada, which has taken such an approach, spent $210 million on e-government projects in 2002 and expects to spend $450 million by 2005. And the U.S. Office of Management and Budget, which manages a national e-government initiative, was provided $20 million in 2002 and a total of $100 million through 2005.

India's national plan for e-government, announced in 2004, is projected to cost $2.5 billion. Countries that choose to create a central support agency have to define its role, location, mandate, and size. Central agencies should have a mandate to perform many tasks, including assessing and enhancing readiness, developing a strategy and implementation plan, building shared infrastructure, finding resources for re-engineering, application development, and change management, developing guidelines, standards, and best practices, forging public-private partnerships, identifying departmental champions, monitoring progress and impact, and overseeing pilot projects.

Identifying Readiness and Moving Forward

One of the key questions facing country is readiness to implement e-government. Readiness depends on an enabling environment that includes:

- Mature technical infrastructure in various government departments.
- Civil service willing to reengineer, share information, and treat citizens as customers.
- Deep Internet penetration or presence of many public access points.
- Legal framework that fosters public confidence and supports a government mandate to conduct transactions online.
- Political commitment from departmental champions and managers.
- Demanding, aware citizen that understands its rights and is willing to express Resistance from civil servants can be the biggest challenge to them—and fight for them in cases of laxity and inefficiency.

Few governments are completely ready on all the above dimensions. But that should not deter governments from starting small—through experimental pilot projects used to bring about changes in public sector performance. An evaluation of e-government projects points to five general lessons. Strong project management skills are crucial. Project managers should clearly identify goals and benefits.

The task is often vast, and not manageable with the resources available to a single government department. Adopting established standards and protocols can minimise the need for customisation. If off the shelf software is available, it should be used instead of reinventing the wheel. Systems analysis, which provides the cues needed for re-engineering, should be done internally. But design, software development, data preparation, training, and the like can easily be outsourced. As are departmental ownership and capacity building no external agency can drive needed changes within a department. External agencies can be useful in mobilising resources and

providing technical inputs. But departments need to have champions who can conceptualise an application and implement it successfully—often by building partnerships with other agencies. Successful e-government projects typically spend about 10 percent of their budget on training and capacity building. Awareness about project benefits has to be raised among senior civil servants and political leaders. Training is required for project managers, who need to define project deliverables, negotiate with consultants and vendors, and manage outsourced development efforts.

Clerical staff need to be trained on specific applications. Supervisors and managers need to be trained on using information. And citizens need to be made aware of online services and how to use them. Significant process re-engineering is required. An important aspect of initiating e-government is documenting existing procedures and simplifying them into tasks that can be completed in a few steps without compromising their basic purposes. The process of simplifying documents and workflows, points of approval, and audits is termed re-engineering. Most e-government projects that have reduced processing times and costs have done so through substantial process re-engineering. Such re-engineering must precede any effort at automation. Re-engineering modifies processes to reduce steps and the number of necessary employees.

This often creates the greatest challenge in e-government implementation: overcoming resistance from civil servants. Automation imposes more regulated workflows, and civil servants often lose the flexibility to deal with applications in any sequence other than the one dictated by computerised workflows—eliminating the power of patronage. Efforts to stall work are easily identified because both the public and supervisors have the capacity to track information and transactions as they move through workstations. Because e-government projects are designed to make decision making more transparent, they should strive to provide benefits and training to civil servants who are losing power and authority. In Andhra Pradesh, India, Smartgov—an e-government project intended to convert the state secretariat to a paperless, electronic

workflow—has been stalled by inadequate effort in managing the process of change.

Re-engineering and changing work processes across 70 departments in the secretariat have been a challenge even for the country's largest information technology company, which is implementing the project. Private partners can play an important role. The choice of e-government project partners can vary from ultinational management consultants to information technology vendors to local companies.

Prepared for World Bank staff and operate, or to build, operate, and transfer. Regardless of the specific agreement, partnerships should build local capacity. If private partners are involved, contracts should be fair for both parties—so that the private sector earns reasonable profits and the public sector achieves its goals for efficiency and service delivery. Complete automation is not necessary handling a few critical components electronically can provide significant benefits. For example, in Chile procurement announcements are published on a Website, and registered suppliers receive announcements by email to increase competition. But departments handle bids manually—though once bids have been processed, the results are announced on a Website. Chile has realised significant savings because of expanded supplier choice and increased transparency in supplier selection, even though the core bidding process continues to be manual. A study estimated that gains from this new system would reach at least $200 million a year—equivalent to 1.4 percent of central government spending or 26.2 percent of spending on public housing in 1997.

Assessing e-government Projects

To date the benefits of e-government have been largely anec dotal. A World Bank evaluation of four projects in India hailed as successes (and awarded prizes by international organisations) indicates that two are moving toward failure. In its first year a computerised system tripled the revenue from fines imposed on overloaded trucks in Gujarat, India. But as soon as the project champion was transferred, disgruntled inspectors disabled the system. Still, the potential of e-government in advancing good governance is increasingly

being recognised. Many pilot projects have shown that gains can be real and projects can be implemented successfully—overcoming numerous constraints. Widely used services, such as issuance of licenses and certificates and collection of payments and taxes, have been put online successfully. Replication and scaling up of such projects must occur after systematic evaluations are conducted by independent agencies.

Government: a public organisation-is part of a broader governance system. It is a means to a goal. These days, government is seen predominantly as a public organisation set up by a society for the purpose of pursuing that society's development objectives. This comprises articulating the society's development-related demands, proposals and needs, aggregating them and implementing responsive solutions. Enjoyment of public consent constitutes the source of government's legitimacy. Transparency is a condition sine qua non for government's accountability vis-a-vis its oversight body.

E-government is a government that applies ICT to transform its internal and external relationships. Through the application of ICT to its operations, a government does not alter its functions or its obligation to remain useful, legitimate, transparent and accountable. If anything, this application raises society's expectations about the performance of government, in all respects, to a much higher level. Public value refers to the value created by government through provision of services, the passing of laws and regulations and other actions. The key things that people value tend to fall into three categories: outcomes, services and trust. Only the public can determine what is truly of value to society. In a representative democracy, value is determined by people's preferences, expressed through a variety of means and reflected through the decisions of elected politicians. People's preferences are formed socially: in the family, among friends and in public debate. Citizen engagement in public affairs is desirable precisely because it challenges and changes underlying preferences. The value added by government is the difference between the benefits that the public eventually enjoys and the resources and powers that citizens decide to give to their government. An implicit-and sometimes explicit-

contract underlies public value. The legitimacy of government as a whole generally depends on how well it creates public value.

The concept of public value provides a yardstick against which to gauge the performance of policies and public institutions, make decisions about allocating resources and select appropriate systems of delivery (including application of ICT to transform the internal and external relationships of government). For something to be of value it is not enough for people to say that it is desirable. It is only of value if they are willing to give something in return (e.g. taxes, granting of coercive powers, disclosure of private information, time or other personal resources).

Public value and ethical values are closely linked. Seen through the lens of public value, the ethos and values of any public organisation, service provider or profession must be judged by how appropriate they are in the creation of public value. Inappropriate values may lead to the destruction of public value. Politicians and public agencies can destroy public value for a range of reasons (e.g. poor information about people's preferences, self-interest, rent seeking, capture of public agencies by narrow interest groups and a lack of incentives for public agencies to act efficiently or responsively to the public's needs). There is no systematic correlation between different levels of public spending (30%, 40%, 50% of GDP) and the public value that is being created; the key issue is how well public resources are spent. Techniques for measuring and managing public value are more complex than in the case of private value.

People often place a strong value on "public" issues such as disbursement equity and due process. It is difficult to aggregate their preferences as they, themselves, are involved in the production of public services. Differences of opinion among citizens extend to ethical disagreements (e.g. over the nature of social justice). Governments have a stewardship role in relation to future generations that is different from companies' obligations to future shareholders. Difficult as these things are to gauge, public value created by outcomes can be measured

by the identification of causative factors (e.g. was the government instrumental); services can be measured by satisfaction and perception of fairness; trust, legitimacy and confidence can be measured by perceptions of the overall performance of government.

UN Millennium Declaration as an example of world making

The United Nations Millennium Declaration 8 outlines the world-making effort by the Member States. It adopts human development as the true measure of the progress of nations and as the preferred development outcome. It outlines the social context best suited for worldwide achievement of human development in the 21st century. The Declaration confirms the domain of all people everywhere. The developmental vision outlined by the Member States in the Declaration is that of "a more peaceful, prosperous and just world", "a shared future, based on common humanity in all its diversity", in which "the principles of human dignity, equality and equity" are upheld. To achieve this vision, the Declaration names "key objectives" to which (the Member States) assign special significance. "Just and lasting peace all over the world" constitutes one such objective. Ensuring that "globalisation becomes a positive force for all the world's people" constitutes another.

"Freeing the entire human race from want", which includes freeing "fellow men, women and children from the abject and dehumanising conditions of poverty" as well as "making the right to development a reality for everyone" is yet another. Other key objectives include:

- Freeing all "humanity from the threat of living on a planet irredeemably spoilt by human activities";
- promoting "gender equality and the empowerment of women as effective ways to combat poverty, hunger and disease and to stimulate development that is truly sustainable";
- developing and implementing "strategies that give young people everywhere a real chance to find decent and productive work";

- ensuring that "the benefits of new technologies, especially information and communication technologies are available to all";
- promoting "democracy";
- strengthening "the rule of law";
- strengthening "respect for all internationally recognised human rights and fundamental freedoms, including the right to development";
- ensuring "every assistance and protection to victims of natural disasters, genocide, armed conflicts and other humanitarian emergencies";
- meeting the special needs of Africa, especially in the area of "consolidation of democracy", "lasting peace", "poverty eradication and sustainable development";
- making the United Nations "a more effective instrument for pursuing all of these priorities".

The Millennium Development Goals, some with specific deadlines, focus on eradication of extreme poverty and hunger; achieving universal primary education; promoting gender equality and empowerment of women; reducing child mortality; improving maternal health; combating HIV/AIDS, malaria and other diseases; ensuring environmental sustainability; and establishing a global partnership for development. The Declaration also specifies modalities for achieving these objectives. The most all-encompassing among them (listed also as a key objective in its own right) is democratic, participatory governance. Specifically, the Member States pledge to work "for more inclusive political process, allowing genuine participation by all citizens". They resolve "to ensure the right of the public to have access to information". Speaking about the basic human rights, they express their conviction that "democratic and participatory governance based on the will

Millennium Declaration Outlines the World-making effort by the Member States

After the bulldozer has rolled over us, we can pick ourselves up and carefully measure the tread marks. Social activity is an ongoing process of world- making. As we 'make things work',

what kind of world are we making? Are we going to design and build circumstances that enlarge possibilities for growth of human freedom, sociability, intelligence, creativity and self-government? Or are we headed in an altogether different direction." There is enough historical evidence to prove that various deviations from the original model of public value creation, as a rule, do not secure developmental outcomes that people want.

Therefore, assuring such outcomes may require adoption of a proactive posture of world making that refuses to see the public as an object and accepts people's preferences as the sole legitimate source of ideas about the direction, content and outcome of the development process. Such a stance assumes responsibility for both the design and the building and maintaining of the societal context for development that people want. Under this scenario, e-government can become part of world making to the extent to which it is instrumental in the supply of public value. ICT deployment in society in general can also become part of world making provided it supports the societal context that people want, as opposed to adjusting it in ways that people do not want, even if this creates private value.

World making is not an exclusive occupation. It engages all people as well as their institutions and organisations, government and business. It hinges on partnerships and broad cooperation. It is based on success in mobilising the supportive strength of moral support and political power. Adopting the outlook of world making takes enlightened, high quality leadership.

It also takes enlightened, high quality citizens, as "good government originates in the quality of civil societies and results from demand for it, rather than its supply." Pervasive and ubiquitous, ICT opens new development opportunities for people. Only a short time ago one could talk about the potential that a relatively narrow group of highly educated, skilled and networked individuals, multifaceted in their interests, could bring to the world of politics and economics by being able to create domains of shared interest and, if necessary, by bestowing on them executive powers. Before life has had time to prove

this thesis right or wrong with the recent arrival of Broadband and especially Wi-Fi technology, one can talk about "smart mobs", i.e. "people (from all walks of life) who would be able to act in concert even if they do not know each other."

Broadband in general and especially the Wi-Fi technology, if combined with the needed minimum of education and ICT skills, have the potential to create a situation in which "e"-government will meet the "n" (for networked) citizens.

Policy choices in e-government development

For a public administration, there is no single established way, no "best practice" that would lead to successful e-government. While in broad terms the ingredients of success are known by now, their interpretation and application must be invented locally. However, it cannot be stressed strongly enough that if a public administration does cross the "digital divide", it opens endless opportunities that are practically inaccessible by any other means. This is true for all public administrations in the world, regardless of the level of economic development, the level of human development and the social and cultural context that prevails in the community or country concerned.

ICT allows a government's internal and external communication to gain speed, precision, simplicity, outreach and networking capacity. This can be converted into cost reductions and increased effectiveness- two desired features of all government operations, but especially of public services. It can also be converted into usefulness, transparency and accountability, networked structures of public administration, information management and knowledge creation in public administrations.

In addition, it can equip people for genuine participation in an inclusive political process that can produce well-informed public consent, the ever more prevalent basis for the legitimacy of governments. From this point of view, ICT in the hands of government can become an effective tool for adding public value. Obviously, maximisation of public value would eventually depend on deciding if, how and where to use the new

communication capacities that can be acquired by governments through the application of ICT to their operations. It is a matter of policy choice.

Compelling Reasons for the Government to use ICT in its Operations and to go on-line:

1. *Priority Development needs that Require Government Involvement:* E-government applications are best embedded in areas that are perceived as closely related to the priority development needs of the society. This brings broad support and makes it easier to overcome inherent difficulties and sustain attention, commitment and funding.
2. *Efficiency and Effectiveness as key Success Criteria of Government Involvement:* It is best if the role that the government plays in such areas is judged partly or predominantly by factors that ICT can bring. The link between ICT applications, optimisation of government operations and achievement of important social development goals is a very convincing argument for continued development of e-government.
3. *Availability of (initial) Funding:* Even initial pilot e-government operations should start with a good understanding of costs involved and assured funding that follows careful analysis of opportunity cost. Whenever advisable and feasible, funding should be treated as a business investment and carry expectation of returns.
4. *Skills and Culture of the Civil Service:* Civil servants must be able (through ICT, change and project management and partnership-building skills) and willing to support e-government, or at a minimum, must be eager to learn and change. The culture prevailing in the civil service determines the assessment of expected loss that e-government application can bring to individual civil servants and the eventual strength and effectiveness of the anti-change lobby.
5. *Co-ordination:* Needed "backroom" coordination and effort-within and between government agencies must be ironed out before any e-government application goes on line to

avoid duplication, assure interpretability and meet the expectations of users.

6. *Legal Framework:* E-government introduces unique legal requirements and these should be realised and faced early on.
7. *ICT Infrastructure:* Infrastructure needs should be assessed against the background of requirements and desired results of planned e-government development. Anything short of this limits both. Anything that goes beyond this carries the danger that ICT infrastructure will be converted into expensive and idle office equipment.
8. *Political Leadership and long-term Political Commitment:* The chief executive officer of the public sector must be committed to e-government, lead and build broad support for it, and be eager to learn. This generates the all-important positive signals that the civil service needs to receive from its top leadership.
9. *Public Engagement:* The public should have a personal stake in e-government development. This should be reinforced by actively, genuinely and continuously soliciting people to participate in the development of e-government applications so that these are custom-crafted to the way people live and work.
10. *Plans for Development of Human Capital and Technical Infrastructure:* There should be a vision and plans for closing the existing divides in skills and access. Otherwise, neither the public administration nor the society can hope to become ICT literate and capable-important ingredients for e-government success.
11. *Partnerships:* Early on, the government should see business firms and civil society organisations (CSOs) as its partners in securing financial resources, skills improvement, better access and adequate capacity to service the ICT network. Partnerships should never be forged at the cost of transparency, accountability or economic soundness of investments.
12. *Monitoring and Evaluation:* Setting clear responsibilities and realistic benchmarks for e-government development,

as well as for their transparent monitoring, is an important ingredient for eventual success and builds up the overall transparency and accountability framework in the public sector.

13. *Perception of added value:* Any design of e-government development must incorporate a calculation of the added value that the application intends to bring to individual users. It is best if this calculation proves to be congruent with that of the users.
14. *Access and skills:* It should be made easy in terms of time, cost and effort for the potential users of e-government to actually employ it. Imaginative solutions for increasing the level of this "ease of use " must be part of any e-government development plan. They should include, but also transcend, individual access and skills.
15. *Privacy and Security:* Security and privacy concerns-culturally defined as they are-must be addressed early on, openly and with demonstrated professional aptitude. The public is bound to expect a breakdown in this area and any news (even informal) of one is bound to become a huge setback with longlasting consequences.

Three Types of e-Government Development: The above analysis allows us to conclude that there are many ways to characterise the development of e-government. On the disappointing side (no public value created) we can talk about such development that is:

Wasteful: engages resources but does not result in optimisation of government operations;

Pointless: even if it optimises government operations, has no (or only minimal) effect on the development objectives preferred by society. On the satisfying side (active engagement in public value creation), and especially from the perspective of the world-making process that has been outlined in the UN Millennium Declaration, we can talk about e-government development that is:

- optimises government operations, and:
- supports human development, i.e. empowers people/raises human capabilities, and in this framework;

- equips people for genuine participation in the inclusive political process;
- supports values considered as essential for human development in the 21st century.

Global E-government

The three main conclusions of the UN Global E-government Survey 2003 are:

1. No country or group of countries in the world owns the monopoly on imagination, wisdom and commitment or political will for use of e-government for the delivery of the public value of human development. Original, advanced content of e-government applications finds a home in the geographic and developmental South, as it does in the North.
2. Only very few governments have opted to use e-government applications for transactional services or for networking.
3. Even fewer governments use it to support the genuine participation of citizens in politics. Those who do, in most cases, apply it at a very rudimentary level.

No country or group of countries in the world owns the monopoly on imagination, wisdom and commitment or political will for use of e-government for the delivery of the public value of human development.

"Very few countries in the world are utilising all aspects of the e-government potential. None does it to the full limit of this potential."—UN Global E-government Survey, 2003.

The objectives of the Survey are to:

1. Present a snapshot of the state of comparative e-government readiness of the countries of the world;
2. Provide an appraisal of the use of e-government *as a tool* in the delivery of services to the public in its capacity as the consumer of such services;
3. Provide a comparative assessment of the willingness and ability of governments to involve the people in e-participation; and

4. Provide a benchmarking tool for monitoring the progress of countries as they move towards higher levels of digital public service delivery in the future.

While not detracting from the importance of other forms of assessment of ICT use by governments, this Survey confines itself to an assessment of e-government on-line facilities, in themselves, a good proxy indicator for the operative posture of a government in e-government development in general.

Global E-government Readiness Rankings: Governments have made rapid progress worldwide in embracing ICT technologies for e-government in the past year. In 2001, the UN E-government Survey listed 143 Member States as using the Internet in some capacity; by 2003, 91 per cent or 173 out of 191 Member States had a website presence. Eighteen countries were not on line. US (0.927) is the world leader followed by Sweden (0.840), Australia (0.831), Denmark (0.820), UK (0.814), Canada (0.806) and Norway (0.778). Among the countries with developing economies or economies in transition, Singapore (0.746) leads, followed by the Republic of Korea (0.744); Estonia (0.697) and Chile (0.671). US (0.927) is the world leader followed by Sweden (0.840), Australia (0.831), Denmark (0.820), UK (0.814), Canada (0.806) and Norway (0.778).

Top 25 Countries' Country E-government

S.No.	*Country*	*Readiness Index*
1.	United States	0.927
2.	Sweden	0.840
3.	Australia	0.831
4.	Denmark	0.820
5.	United Kingdom	0.814
6.	Canada	0.806
7.	Norway	0.778
8.	Switzerland	0.764
9.	Germany	0.762
10.	Finland	0.761
11.	Netherlands	0.746

Contd....

12.	Singapore	0.746
13.	Republic of Korea	0.737
14.	New Zealand	0.718
15.	Iceland	0.702
16.	Estonia	0.697
17.	Ireland	0.697
18.	Japan	0.693
19.	France	0.690
20.	Italy	0.685
21.	Austria	0.676
22.	Chile	0.671
23.	Belgium	0.670
24.	Israel	0.663
25.	Luxembourg	0.656

Web Measure Index 2003, Top 25 Countries

S.No.	*Country*	*Web Measure Index*
1.	United States	1.000
2.	Chile	0.838
3.	Australia	0.812
4.	Mexico	0.808
5.	United Kingdom	0.777
6.	Canada	0.764
7.	Philippines	0.747
8.	Singapore	0.703
9.	Denmark	0.694
10.	Sweden	0.683
11.	Germany	0.683
12.	Switzerland	0.668
13.	Estonia	0.642
14.	Israel	0.633

Contd....

15.	Argentina	0.624
16.	Italy	0.616
17.	Ireland	0.616
18.	Republic of Korea	0.607
19.	Finland	0.603
20.	Norway	0.581
21.	Brazil	0.576
22.	France	0.570
23.	Malta	0.568
24.	Turkey	0.555
25.	New Zealand	0.552

Chile, Mexico, Philippines, Singapore, Estonia, Argentina, Brazil, Republic of Korea, Malta and Turkey have made much faster and more effective progress in their e-government programmes than some of the industrialised countries.

Portal/Regional Level/Hong Kong: The Electronic Service Delivery (ESD) Scheme

The Hong Kong Special Administrative Region Government rolled out its Electronic Service Delivery (ESD) Scheme in December 2000, to work towards its E-government mission of providing seamless electronic services to the public and business in an efficient and customer-centric way, and to lead by example in the adoption of e-business. The ESD Scheme is implemented through a one-stop portal, which provides integrated public and commercial services in a customer-oriented way. Some 140 on-line public services are now available, including job search, booking of sports facilities, booking for marriage dates, application for renewal of driving/vehicle license, filing of tax return, change of address, purchase of government publications, application for business registration, payment of government bills, live web cast of road traffic conditions, voter registration, etc.

The ESD Scheme highlights the public-private sector partnership model. The private sector operator is responsible

for developing, financing, operating and maintaining the system, and the Government starts to pay transaction fees to the operator after the accumulated transaction volume has reached a pre-agreed level. In turn, the private sector operator is allowed to make use of the ESD portal to provide advertising and private-sector e-commerce services to generate additional income. Under this model, the business risk to the Government is kept to the minimum, while the private sector operator has the continuous incentive to promote the wider use of on-line public services and to introduce service enhancements. Most importantly, with the provision of value-added e-commerce services together with E-government services in a single portal, the public and businesses can enjoy more customer-centric and one-stop service. The community has warmly welcomed the ESD Scheme. The average daily hit rate now exceeds 2.5 million, with 280,000 page views; while the average monthly transaction volume has increased by some 40 per cent (when compared with the year before). Currently, over 80 per cent of marrying couples who file their marriage notice on the first day of the period make their booking through ESD; and the percentage of bookings for public sports facilities made through ESD had increased to 30 per cent by mid-2003 (up from 11 per cent in mid 2002). While the general usage level is encouraging, the takeup rate of individual applications that involve more steps and documentation has not been as great as expected. Both the Government and the private sector operator are continuing to promote further usage of ESD services. Such promotional initiatives include providing financial (e.g. cash rebates, lucky draw, fast-food coupons) and non-financial (e.g. priority treatment to ESD users) incentives.

Transparency/Republic of Korea: OPEN System

The Seoul Metropolitan Government introduced the OPEN System in September 1998 to lower the level of corruption in the city administration. The System allows posting on line all the consecutive procedures (reception, review, final processing, and whether the application has passed the bottom-up approval system from deputy-director to director to director-general) of cases undergoing administrative processing. Related laws are

also shown in detail. This way the general public, including the person who filed an application or complaint, can monitor public administration. This is expected to prevent corruption and increase transparency. A total of 54 categories of civil applications where corruption is most likely to occur have their procedures posted on the OPEN System. The phone numbers and e-mail address of the department in charge are available on the website so that people can reach the working-level official currently handling the case. The System features the following characteristics:

- ***Guarantee of Transparency:*** Information on progress in dealing with pending cases, how the case is reviewed and whether it has been approved is posted on line in real time.
- ***Easy Access:*** Without making a phone call or paying a visit to City Hall, a person can find out anything she/he wants to know about the processing of her/his application.
- ***Enhanced Credibility:*** By being open to the public, the OPEN System secures fairness and objectivity, thereby dispelling people's distrust in public governance.

According to a survey conducted from July 2000 to December 2002, 80.44 per cent of those surveyed confirmed that they saw the OPEN System as contributing to more transparent public governance. Experience confirms that corruption develops when everyone but a handful of people is kept in the dark and everything is done behind closed doors. Bringing the matters out into broad daylight is the best way to root out corruption. What is most important in securing transparency in public administration is to put in place a system that urges people's participation and encourages public officials to guard against corruption. If applied in a smart way, Information Technology can promote democracy and good governance.

Portal/Municipality Level/Finland: e-Tampere

The City of Tampere, Finland (200,000 inhabitants, 15 per cent university students) launched in 2001, a special programme for the promotion of the development of the information society. Its three mutually supportive dimensions are: strengthening

the expertise base of research and education; generating new businesses connected to the information society; and developing the digital services of the local government and making them accessible to the entire population. Among six independently operating subprogrammes, Infocity has the closest connection to e-government. Infocity comprises three dimensions: content production or developing digital services, access facilitation and computer instruction. Ongoing projects and future plans of the e-Tampere programme and Infocity sub-programme include multi-purpose smart card, e-Health, and expanding e-Democracy, e-Learning and mobile services. The web pages of the City of Tampere are accessed over two million times a month. The bulk of the material on the website is still informative in purpose, but the share of participative opportunities, interactive services and formal correspondence with the local authorities is increasing. The most popular sites are events calendars and bus timetables. (You can also request the departure time of your next bus on your mobile phone as a short text message.) Interactive on-line services and final transactions exist in the most comprehensive way on the library website: the client can check directly from the library database whether a book or other piece of material is available and reserve it by using a personal identification number. Additionally, one can sign up for an e-mail alert service on new library acquisitions in specific fields. Reservations are answered via e-mail, mobile phone or ordinary letter. It is possible to view the housing market on the Internet and apply for rental housing by e-mail. It is also possible to monitor your electricity and water consumption over the web.

The City of Tampere has placed more than one hundred computers with free Internet connection in various kinds of public places. In addition to those computers, all schools and some shops maintain Internet computers for public use. The local authorities run one net cafe. There are connections available for senior citizens at day centres and community centres. In the suburb of Hervanta an EU-funded project is running a project to fight social exclusion with the help of Internet skills and opportunities. A service point for the visually disabled was opened in 2002. The netmobile,

Netti-Nysse offers all e-government services in a wireless form on wheels, wherever people are, in an unhurried atmosphere.

The bus itself has already run millions of kilometres along the bus routes of Tampere as an ordinary city bus. Refurbished into an instrument for the information society, it functions as an outreach tool for the City Library, transporting skills and knowledge to the suburbs, gatherings and even neighbourhood parties. There are 12 computers in the bus, plus printing facilities and a small auditorium. And there is always someone present to help and instruct the users along the information superhighway.

Taxation/U.S.: IRS Electronic Tax Administration Programme

Each year the Internal Revenue Service (IRS) processes 112 million individual tax returns and 79 million business tax returns. Individual tax returns 25 pages in length are not unusual and a few of the largest businesses file returns exceed 30,000 pages. On top of this, businesses file 1.5 billion information returns (reporting wages for individuals, interest and dividend payments etc.) and individuals and businesses combined make 65 million payments totalling almost $2 trillion. At the heart of the IRS Electronic Tax Administration Programme is the belief that technology can, make complying with tax laws, less burdensome. The Programme to date includes these key components:

1. The electronic filing Programme for the Form 1040, used by individuals and small businesses and begun in 1986, provides faster refunds for taxpayers who have overpaid taxes during the year, offers electronic payment capabilities for those who owe more, and provides 99 per cent accuracy for both. In 2003 approximately 53 million individuals and small business 1040 tax returns were "e-filed". E-filing is accomplished through tax professionals, commercial tax software and, for the simplest returns, telephone. For the first time in 2003, as a result of an agreement between the IRS and the tax software industry, 60 per cent of these taxpayers can use

commercial internet tax products at no cost. Over 2.5 million taxpayers took advantage of this service.

2. While the electronic filing of business returns is less advanced, over 6.5 million business returns and over 500 million information returns were electronically filed by businesses in 2003.
3. The IRS collected $1.6 trillion electronically in 2003 through a system that saves significant time and posted payments to taxpayer accounts with 99.9 per cent accuracy. Payments can be scheduled up to a year in advance and 16 months of payment history can be accessed via the Internet.
4. The IRS website provides easy access to forms, publications and other tax information and received 4 billion hits in 2003. Also, 500,000 forms and publications were downloaded during the year. The over 60,000 pages of content on the site is organised by user type (businesses, individuals, charities and non-profits etc.) and features a keyword search for the most commonly sought information. Also in 2003, features were added to the site allowing new businesses to obtain an Employer Identification.

Number and allowing taxpayers who overpaid their tax to check the status of their tax return and refund on the site, once the return has been filed. Keys to this success include effective marketing through television, radio and print advertising and close partnerships with the tax software industry and the tax professional community, which prepares 55 per cent of all individual returns and over 80 per cent of all business returns. The final key is the focus on taxpayer needs. The IRS does extensive market research each year and all new tax products go through usability testing before rollout.

Financial Information System/New Zealand: CFISnet

The New Zealand Treasury uses the Crown Financial Information System (CFISnet) to collect, consolidate, analyse and report on the finances of the New Zealand Government. Government entities use the Internet to connect to a central

database developed in-house at the Treasury. The Treasury decided to develop CFISnet because the system it replaced: was good at collecting financial data but had no facility for handling the non-financial data that was central to many processes; was difficult and expensive to maintain (it required specific software to be installed and maintained at each entity- and there were plans to have a significant number of new entities coming on line due to a change in accounting policy); was not being regularly upgraded by software supplier, and this was causing compatibility problems for many entities.

There was also a demand for developing the Treasury's own system so that it could continually adapt it to changing and expanding needs. Using the Internet to connect to a central database seemed the obvious choice to provide the functionality that was desired. The main hurdle to overcome was in providing adequate security without compromising ease of use.

Procurement/China: Electronic Public Procurement (EPP)

On 1 January 2000, the Tendering and Bidding Law of the People's Republic of China came into force. Three years later, on 1 January, 2003, the Government procurement Law of China came into force. These laws stipulate which projects must use tendering procedures when purchasing goods and construction and other services. The total value of public procurement in China was US$10 billion in 2002. It is predicted to reach US$20 billion in 2003. If it were to reach the international average of 10 per cent of GDP, it would amount to US$800 billion. The traditional procurement methods could not cope with the rapid progress of public procurement. Hence, Electronic Public Procurement (EPP) was adopted.

Most enterprises in China are connected to the Internet and the Chinese Government has made great efforts to promote electronic public procurement. On 1 July, 2000, the State Development and Planning Commission appointed the public procurement website, along with three newspapers, as the official media for posting public tender notices. The EPP website registers more than 100 tendering notices daily and subscribers may freely browse tender notices. When they encounter a notice that they are interested in, they can download the attached

bidding documents; communicate on line to clarify doubts; get advice from experts; submit prepared bidding documents by uploading them to the designated website; watch a live on-line broadcast of the bids opening ceremony; and check the bidding results on line. Within the framework of EPP, e-auctions have been initiated in China.

Taxation/Mexico: e-SAT

The Tax Administration Service (SAT, in Spanish) has developed the eSAT strategy as part of the services automation project offered by the Mexican government. The Electronic Payment Plan is one of the components of the eSAT strategy. Until July 2002, the payment of Federal taxes was done quarterly, in most cases through printed fiscal formats. A small number of individuals filed their returns electronically. This was cumbersome:

A taxpayer was required to obtain from SAT a security certificate and an access account. The taxpayer had to electronically transfer funds in the bank, which gave him an operation folio. As the next step, the taxpayer had to send funds via Internet from the bank to the SAT's portal, jointly with the fiscal information. In the new system, as a result of an agreement between the Tax Administration and the Mexican Banking System, execution of payment from the taxpayer's account through the Banking Portals is allowed.

With the purpose of complementing the New Electronic Payment Plan, different applications have been developed:

Electronic Signature: A unique, personal and non-transferable means of identification that the taxpayer obtains through SAT's Internet portal or at the offices of the Fiscal Authority; Tax Return with Statistical Information (DIE in Spanish)-a control mechanism for those taxpayers who do not declare the payment of tax to the fiscal authority to use in periodically filing a return in which they state their reasons for not doing so; Complementary Tax Return for the correction of data-which allows taxpayers to correct mistakes pertaining to data stated in returns filed through the Internet; Inquiry of Transactions-to provide legal certainty to the taxpayer that

compliance with fiscal obligations was registered by the fiscal authority. It allows taxpayers to inquire through the Internet portal about the fiscal obligations with which there has been compliance; Reprinting notices of receipts in zero and data corrections-in case the taxpayer does not receive a receipt or misplaces the receipt with the digital seal that is received;

Annual Tax Return: from 1 March, 2003, information may be sent electronically through the Internet. This provision is optional for individuals and for corporations. The Electronic Payment Plan has had a positive impact on integration of the information in the SAT's databases. Currently the efficiency and control of the operation has increased in the following fields: transactional management of payments; elimination of documents; centralisation of processes; and reduction of process time.

Procurement/Sub-national level/The State of Sao Paolo, Brazil Bolsa Eletronica de Compras-BEC/SP

In the second half of the 90s, awareness of the need to secure control systems that could restore the accountability of public accounts information, in conjunction with the ICT revolution, gave the Sao Paulo State Government the opportunity to adopt and foster a public sector modernisation strategy aimed at overthrowing the existing bureaucratic paradigm. The government was able to achieve the digitisation of figures on public income and expenses. In this context it implemented the "Bolsa Eletronica de Compras" (BEC/SP), an e-procurement system, starting activities in September 2000. BEC/SP is a dynamic electronic price information system for governmental procurement. The system observes federal purchase law and extends to the whole of public management of Sao Paulo State. It comprises 1,200 management units, more than 7,000 public buyers, use of a materials catalogue of over 90,000 items and bids to a supplier file of over 45,000 enterprises. Its main features are:

(a) Decentralisation of purchases (in many cases the procurement was centralised, generating stocks and administrative costs);

(b) Purchasing at the right time (due to time-consuming bureaucratic procurement, management units where not used to planning);

(c) Autonomous decision of the buyer (every buyer has an on-line database at his disposal, concerning public prices paid);

(d) Just-in-time logistics (eliminating warehouses and transferring distribution costs to suppliers);

(e) Impersonality of negotiation (the buyer does not know the supplier; the process is confidential);

(f) Payment to suppliers on the fixed dates of the public bids (the Brazilian public sector has lived the legend of the bad payer).

After two years in operation, these are the main results and impacts:

(a) Almost all offices of the Sao Paulo State administration have practised e-procurement through BEC/SP, even legislative and judicial offices;

(b) More than 90 classes of materials have been codified (following the Federal Supply Classification exercise), concerning about 13,000 items;

(c) From September 2000 to December 2002, 15,736 bids were issued, with price reductions (i.e. budgetary savings) of 20.2 per cent;

(d) Information on prices in effect (medium offered prices and best prices) has been disseminated to the market.

Due to the purchasing power of the state, BEC/SP will be able to develop as a regulatory tool for the goods and services market. The system is starting to be used by municipalities, with the same beneficial results as those achieved at the State level.

Performance Measurement Framework/Canada

One of the key goals of Canada's Government On-Line (GOL) initiative has been to increase public and client satisfaction with government services. Performance measurement demonstrates the extent to which this is being

achieved; it ensures that on-line services are based on clients' expectations and meet individual needs. Accordingly, the performance measurement framework comprises 11 performance indicators: convenience, accessibility, credibility, critical mass of services, take-up, service transformation, client satisfaction, security, privacy, efficiency and innovation. Most of the data are being collected through departments' regular reporting to the Treasury Board Secretariat (TBS) on their plans for putting services on line, as well as on the progress that they have made to date. One of the unique aspects of this reporting is that it relies on an electronic database through which the information filed is accessible to all departments participating in the GOL initiative.

This provides a good way to share lessons learned and to identify further opportunities for collaboration. The reports include, for example, assessments of the depth of on-line services. The standard tool-a three-stage model moving from publishing, to interacting, to transacting-applies primarily to transaction services as published information about the service does not describe, for instance, weather on-line or geographic information mapping. As a result, TBS has worked with a group of information-based departments to create a tool to measure the depth specifically of information services-a new model moving from publishing (basic information is available on line), to customizing (holdings are increasingly interactive), to providing client-defined access (users can increasingly manipulate/ synthesize information from different sources). While the performance measurement framework combines self-assessment data with feedback from clients who use on-line services, TBS is currently working with provincial governments to finalise a second version of the Common Measurement Tool (CMT) that will measure specifically, client satisfaction with the on-line channel.

One of the success factors in developing the GOL performance measurement framework was the consultation with, and feedback from, multiple groups, including measurement experts in the federal government, GOL stakeholders, senior managers across multiple departments,

and an independent third party. The result was a rich exchange of ideas and a validation of the approach chosen.

Security/United Kingdom

The UK Government set out its vision for an on-line nation in March 2000, summarised in three targets: to make the UK one of the leading knowledge economies; to ensure that anyone who wants to can access the Internet by 2005; to ensure that all government services are available electronically by 2005. Security underpins much of this work, and demands a careful balancing act. Too little security, and individuals, businesses and government users will not trust electronic services; too much, and the services can become too expensive, or too burdensome to use. The Office of the e-Envoy has developed a set of Security Frameworks that describe how public sector organisations should address the security of the electronic services that they are delivering.

These Frameworks are based on the Information Management Standards BS7799 and ISO17799, so should be familiar to the public sector and also to those parts of the private sector implementing government systems. A common approach is needed, both because of the interconnectivity of systems across the public sector, and also because the reputation of the government as a whole can be damaged by weaknesses in specific areas. But rather than being prescriptive about security mechanisms, the Frameworks emphasise the need for risk management and encourage each organisation to understand and counter the specific risks to their services. One of the key security elements in this environment is authentication-establishing on-line identity or entitlement to a specific service.

The UK government supports private sector provision of authentication services, and also supports voluntary industry-led approval of authentication (and other trust related) services. Industry has set up an organisation-Scheme-to undertake approvals, and several commercial authentication services are now available. But the take-up of these services among the population at large has been slower than expected. So the UK government is also exploring other ways of enabling

individuals to authenticate themselves for e-government services-by taking advantage of established relationships between that individual and, say, his/her bank or employer.

E-government Readiness Rankings in South and Eastern Asia E-government

Readiness	***Index***
Singapore	0.746
Republic of Korea	0.744
Japan	0.693
Philippines	0.574
Malaysia	0.524
Brunei Darussalam	0.459
Thailand	0.446
Indonesia	0.422
China	0.416
Viet Nam	0.357
Mongolia	0.343
Myanmar	0.280
Cambodia	0.264
Lao People's Democratic Republic	0.192
Timor-Leste	0.087
Average	***0.437***

South-central Asia

The countries in South-central Asia score low in their state of e-government readiness. Maldives (0.410), which scores the highest in human capital, is also the regional leader, though its e-government readiness index is about at the level of the global mean. Kazakhstan (0.387) and Sri Lanka (0.385) follow but their e-government readiness remains much below the world average. Despite much progress in ICT, the lack of infrastructure and education has limited the enabling environment in India and the reach of e-government to include all. The same is the case in Pakistan. More than in other parts

of the world, telecommunication infrastructure is severely lacking in South Asia. Irregular or non-existent electricity supplies are a common feature and a major barrier to the use of ICTs, especially outside the major towns. Major power outages are experienced, especially in the rural areas in India and Pakistan. Computers and cell phones remain luxury items, not available to all. The cost of telephones and the Internet are high relative to the per capita GDP of many of the South Asian countries.

Additionally, the relatively lower level of human development impedes access to all. With 20 per cent of the global population living in the Indian sub-continent alone, the potential of e-government to development could be enormous, not only for the region but for the world as a whole. However, the serious limitations on literacy and education confine the benefit of e-government to the very few. Graphs 3.6 and 3.7 illustrate the deficiencies in infrastructure and human resources within the countries of South-central Asia and in comparison with other regions of the world.

E-government Readiness Rankings in South-central Asia E-government

Readiness	***Index***
Maldives	0.410
Kazakhstan	0.387
Sri Lanka	0.385
India	0.373
Turkmenistan	0.335
Iran (Islamic Republic of)	0.330
Kyrgyzstan	0.327
Nepal	0.268
Pakistan	0.247
Bangladesh	0.165
Bhutan	0.157
Afghanistan	0.118
Average	***0.292***

E-government Readiness in Western Asia E-government

Readiness	***Index***
Israel	0.663
United Arab Emirates	0.535
Bahrain	0.510
Turkey	0.506
Cyprus	0.474
Jordan	0.429
Lebanon	0.424
Qatar	0.411
Armenia	0.377
Kuwait	0.370
Azerbaijan	0.364
Oman	0.355
Georgia	0.351
Saudi Arabia	0.338
Syrian Arab Republic	0.264
Yemen	0.188
Average	***0.410***

E-government Readiness Rankings in Africa E-government

Readiness	***Index***
South Africa	0.515
Mauritius	0.471
Seychelles	0.420
Algeria	0.370
Botswana	0.347
Lesotho	0.346
Namibia	0.340
Tunisia	0.329
Cape Verde	0.322
Zimbabwe	0.304
Kenya	0.299

Contd....

Uganda	0.296
Swaziland	0.295
Gabon	0.283
Zambia	0.276
Sao Tome and Principe	0.272
Cameroon	0.270
Morocco	0.265
Congo	0.265
United Republic of Tanzania	0.253
Rwanda	0.244
Ghana	0.241
Egypt	0.238
Benin	0.235
Malawi	0.233
Togo	0.231
Madagascar	0.229
Nigeria	0.225
Sudan	0.206
Senegal	0.201
Angola	0.192
Burundi	0.181
Djibouti	0.179
Comoros	0.176
Mozambique	0.173
Gambia	0.172
Mauritania	0.161
Mali	0.140
Burkina Faso	0.135
Guinea	0.132
Ethiopia	0.128
Sierra Leone	0.126
Niger	0.060
Somalia	0.049
Average	***0.246***

South and Central America

South and Central America enjoys a higher level of per capita income, human development and the basic infrastructure required for e-government development than some other developing regions of the world. This is reflected in a higher than world average for many of its countries such as Chile (0.671), Mexico (0.593), Argentina (0.577), Brazil (0.527), Uruguay (0.507), Peru (0.463) and Colombia (0.443), among others. Chile, Mexico and Argentina are success stories in e-government programmes worldwide.

E-government Readiness Rankings in the Caribbean E-government

Readiness	***Index***
Saint Lucia	0.438
Dominican Republic	0.438
Jamaica	0.432
Bahamas	0.429
Trinidad and Tobago	0.427
Saint Kitts and Nevis	0.426
Barbados	0.413
Cuba	0.372
Antigua and Barbuda	0.364
Grenada	0.348
Saint Vincent and the Grenadines	0.326
Average	***0.401***

These countries have made tremendous progress in expanding, updating and improving the design and coverage of the information and services they provide to the public in the last one or two years. Chile's strength lies in strong integration among all of its national, ministry and one-stop sites. Combined, these sites show that Chile has developed professional government sites that are providing more information and services than most users could ever desire.

The national portal and the ministry sites all fit together in a well-integrated system of on-line information and services, with the ministry sites supporting the information, services and overall approach of the national portal. Excellent one-stop-shops exist for, among other things, people's engagement and participation; contracts, bids and solicitations; and payment of fees; as well as other transactions.

E-government Readiness Rankings in South and Central America E-government

Readiness	***Index***
Chile	0.671
Mexico	0.593
Argentina	0.577
Brazil	0.527
Uruguay	0.507
Peru	0.463
Colombia	0.443
Panama	0.432
Costa Rica	0.427
Belize	0.422
Guyana	0.422
Paraguay	0.413
Bolivia	0.411
El Salvador	0.409
Ecuador	0.378
Venezuela	0.364
Guatemala	0.329
Nicaragua	0.324
Honduras	0.280
Average	***0.442***

Web Measure Index 2003, Top 25 Countries Web Measure Index

S.No.	*Country*	*Index*
1.	United States	1.000
2.	Chile	0.838
3.	Australia	0.812
4.	Mexico	0.808
5.	United Kingdom	0.777
6.	Canada	0.764
7.	Philippines	0.747
8.	Singapore	0.703
9.	Denmark	0.694
10.	Sweden	0.683
11.	Germany	0.683
12.	Switzerland	0.668
13.	Estonia	0.642
14.	Israel	0.633
15.	Argentina	0.624
16.	Italy	0.616
17.	Ireland	0.616
18.	Republic of Korea	0.607
19.	Finland	0.603
20.	Norway	0.581
21.	Brazil	0.576
22.	France	0.570
23.	Malta	0.568
24.	Turkey	0.555
25.	New Zealand	0.552
	Average	***0.351***

E-government Readiness Rankings in Oceania
E-government

Readiness	***Rankings***
Australia	0.831
New Zealand	0.718
Micronesia (Federated States of)	0.526
Fiji	0.425
Tonga	0.391
Samoa	0.299
Nauru	0.293
Solomon Islands	0.284
Papua New Guinea	0.250
Vanuatu	0.142
Marshall Islands	0.038
Palau	0.009
Average	***0.351***

On-line Profile of UN Member States

UN member states 191

With a government website presence 173

With a single entry portal 45

With public service provision 63

With on-line transactions provision 33

E-participation Framework

E-information: The government websites offer information on policies and programmes, budgets, laws and regulations, and other briefs of key public interest. Tools for dissemination of information exist for timely access and use of public information, including web forums, e-mail lists, newsgroups and chat rooms.

E-consultation: The government website explains e-consultation mechanisms and tools. It offers a choice of public policy topics on line for discussion with real time and archived

access to audios and videos of public meetings. The government encourages citizens to participate in discussions.

E-decision Making: The government indicates that it will take citizen input into account in decision making and provides actual feedback on the outcome of specific issues. Whereas e-participation endeavours around the world are not limited to state sponsored e-groups but encompass a plethora of interactions that involve citizens, NGOs and business organisations, this Survey limits itself to exploring only government willingness to promote such groups through the use of the ICT. As such, it confines itself to citizen.

Global e-Government Expansion and Design

1. Governments have made rapid progress worldwide in embracing ICT technologies for e-government in the past year. In 2001, the UN E-government Survey listed 143 member states as using the Internet in some capacity; by 2003, 91 per cent or 173 out of 191 member states had a website presence. Eighteen countries were not on line.
2. English appears to have become the language for e-government presence on line. One hundred and twenty-five out of 173 countries provide websites in the English language in addition to their native language. Eighty-eight per cent of the countries surveyed have websites with information in one or more of the six UN languages, i.e. English, French, Spanish, Arabic, Chinese and Russian.
3. About 88 per cent of South and Central American and Caribbean countries provide websites in either Spanish, English or both. In Africa, 81 per cent of countries provide website information in either English or French, while in Western Asia the majority of state websites are in Arabic.
4. There is no one model of e-government development. At present e-government websites are mushrooming around the globe in a haphazard manner. State and sectoral websites reflect wide variations among-and between-countries in the provision of on-line information and basic public services.

5. There appears to be a gradual, but steady, trend toward national portal/gateway sites, speciality portals and one-stop service sites. However the ability of the various governments to develop and present them in an integrated, unified fashion is uneven.
6. There is a strong correlation between the existence of a formal e-government policy/statement and/or e-government portal and the overall quality and ranking of a nation's sites on the various web measure indices. More and more countries are employing a one-stop-shop portal for integrated delivery of information and services. Twenty-four of the top 25 countries and 39 of the top 50 countries have either or both, a clear e-government policy/ statement and a specific e-government portal.
7. There are no evolutionary development stages in e-government. Countries can-and do-jump from the stage of emerging or enhanced presence with limited information to the transactional stage or networked stage in a short time.

E-government readiness rankings

8. This Survey confirms that North America (0.867) and Europe (0.558) lead among the world regions.
9. In the rest of the world, South and Central America (0.442) have the highest aggregate state of e-government readiness followed by South and Eastern Asia (0.437), Western Asia (0.410), the Caribbean (0.401), Oceania (0.351), South-central Asia (0.292) and finally, Africa (0.241).

Global e-government Readiness Rankings

The global e-government readiness rankings for the top 25 countries among the UN member states. Most of the high-income developed economies rank the highest and considerably higher than the global average of 0.402. Though the industrialised countries make up the majority, a few middle-income developing countries are in the group, indicating a fast "catch up". The United States is the current global leader with the highest index of 0.927, followed by Sweden (0.84), Australia (0.831),

Denmark (0.820), the United Kingdom (0.814) and Canada (0.806). Among the developing countries, Singapore (0.746), the Republic of Korea (0.744), Estonia (0.697) and Chile (0.671) are among the top 25 e-government ready countries. With a global average of 0.402, these top 25 countries are far ahead of the rest of the world with rankings that range 60 to 200 per cent higher than the global average.

Region wise, 16 out of 25 countries belong to Europe, two to North America, three to South and Eastern Asia, two to Oceania and one each to Western Asia and South and Central America. No country from South-central Asia or Africa made it into the list of the top 25 e-government ready countries.

The Three Ps: As far as the e-Governance initiatives are concerned, the three Ps—Public-Private Partnership—say it all. This model requires less investment from the government.

States R Chandrashekhar, Joint Secretary, Department of Information Technology, Government of India, "We welcome private participation in fulfilling the e-Governance initiatives of the Government of India. But this participation can only happen at the front-end level since the government is handling all the back-end work. For example, in the case of ICT kiosks, any private party can do the setting-up of a kiosk, but to run that kiosk the government will provide all support."

If we have a closer look at the various projects already implemented in India, as well as those at the pilot stage, then we get a clear idea of the PPP model. Some of the IT companies that have taken a pioneering role in e-Governance projects include Microsoft, Sun, IBM, TCS, HCL Infosystems and Adobe.

Microsoft is working with 14 state governments in various projects across the country. Says Rohit Kumar, Country Head, Public Sector, Microsoft India, "Our e-Governance vision is to enable the public sector and governments to lead the information society by leveraging information technology for delivering effective citizen-centric services and ushering in a more participative and transparent form of governance. The public-private partnership is very important in the successful implementation of e-Governance projects."

According to S. Angiah, Business Development Manager, India and SAARC, Adobe Systems, "Adobe has a unique advantage in the PPP model. More often than not, Adobe directly handles the pilot projects for the identified government department. We along with the particular government department then freeze the out-based project, after which it is the government that floats the tender seeking other vendors to bid, operate, transfer or own. Adobe's value proposition is unique and very visible after the projects are undertaken."

Projects Powered by this Model: There are various projects that have already been implemented by the Government of India and various state governments in association with private players. Notable ones are the Bhoomi project of the Karnataka state government, Community Information Centres in the north-eastern states, AP On-line, Kalyan Damodar Valley Project, CDFD Medical Bio-informatics Centre for Excellence in Hyderabad, and the Common Service Centres (CSCs). Chandrashekhar informs, "A lot of progress has been made in the area of e-procurement. This will again be an example of the PPP model in action. It will be a unique project, as well as large. This project requires a great deal of participation and the involvement of different ministries and departments. Things are moving forward in this initiative. The Central Vigilance Committee has recommended this project for bigger organisations and PSUs. In fact, online tenders are now a reality. Soon, entire government tenders will be available online."

The SharePoint Portal Solution is poised to play a pivotal role in keeping with the e-Governance vision for greater transparency in public affairs and being local-language-enabled, since state governments are required to communicate with citizens in local languages. Kumar says that in the recent past Microsoft has witnessed great demand from government agencies across India to develop solutions that enable effective communication between elected governments and the public.

Some important projects in the pipeline are SUNKalp by Sun Microsystems, MCA-21 of the Ministry of Company Affairs (along with TCS), and the eCOP project of the Andhra Pradesh

government (along with Sun). MCA-21 is the largest e-governance initiative by the Ministry of Company Affairs, and a mission project under the Government of India's NeGP was formally launched on a pilot basis with a comprehensive online portal to enable e-filing. HCL Infosystems, as a single-window infrastructure provider, has participated in a number of e-Governance projects providing direct support infrastructure at 300 locations.

Elaborates Jaijit Bhattacharya, Country Director, Government Strategy, Sun Microsystems, "Though we have not participated in the MCA-21 projects, we are working on various e-Governance projects both with the central as well as state governments. Sun is helping AP build better police services with a state-wide data access network. As part of the Vision 2020 programme, eCOPS is an e-Governance initiative that empowers the law enforcement services of AP with real-time and seamless data flow. The focus of eCOPS is the computerisation of investigation activities and administration and support services across the state." Sun is also working with the Haryana Government wherein its office productivity suite, StarOffice 7, will be adopted across the state government's departments."

The ICT kiosk project is at an advanced stage. Almost all private players are interested in participating in the ICT kiosk projects. Microsoft has already established 1,500 kiosks in rural areas in the last 18 months. "All ICT kiosks need a rich user interface. Our Flash and Adobe readers, along with collaborative features, are freely downloadable so that ICT kiosks can provide an engaging experience for the user," comments Angiah.

Adds Sudhir Narang, Senior VP, Service Provider and Government, Cisco Systems India and SAARC, "As a part of the $5 million investment to support the NeGP, Cisco will establish CSCs in 100 villages in India. These will provide citizens online access to government services in rural areas. We will also establish Cisco Networking Academies (CNAs) to help address the shortfall of networking professionals in the country. To date there are 131 CNAs across 21 states and one union territory."

Meanwhile, IBM provides service providers with citizen solutions that are based on open standards. It also works closely with NIC, CDAC and state nodal agencies to provide Web-based solutions in agriculture, panchayati raj, taxation and health to realise the concept of ICT kiosks. "In this project our goal is to establish 100,000 ICT kiosks covering India. Rural areas will be given higher consideration. In other words, one out of every six villages will have ICT kiosks. The implementation strategy of this initiative will be completely dependent on PPP. We plan to take on this project through block-wise coverage," informs Chandrashekhar.

Better Cooperation

When it comes to e-Governance projects, better cooperation is the need of the day both from public as well as private players. Says Narang, "Cisco is proud to collaborate with the Indian government in its endeavor to e-enable the country, which is an important step as India moves into the next phase of economic growth. From an implementation perspective, the response has been positive and reflects the government's commitment."

Many vendors spoke about the positive response they are getting from the different government departments with which they are working. Explains George Paul, Executive Vice-president, HCL Infosystems, "Unlike the common perception, we find that there are very dynamic and positive-spirited government officers with the vision and enthusiasm to implement e-governance in all aspects of their operations. We have seen them effectively adapt to these changes. The policy of the government is to invite participation both from the public and private sector—whoever is an expert in their respective fields."

IBM has been working very closely with the central and state governments on many strategic projects that pertain to the complete range of e-governance solutions and requirements such as citizen-centric applications, business process re-engineered solutions, and enterprise computing. Observes Satish Kaushal, Country Manager, Government, Software Group, IBM

India: "All IBM solutions are built on government needs, and are based on open standards and inter-operable platforms."

Challenges Ahead

However, the complex nature of our governance process as well as the unnecessary interference of some groups of people is creating problems for private players during the implementation of the projects. Opines Bhattacharya: "There is a need for further legislation for the smooth functioning as well as implementation of these projects. Banking facilities should be extended to each and every corner of the country. The Government of India is providing all-round support to private players like us. Affordable access to information infrastructure will play a critical role in India becoming a developed country…the government recognises that, and is committed to it."

Developing standards is certainly a key component in any continued success. A lot of integration and the involvement of different bodies is required to design these standards. "We are aggressively working on this and have already formed five groups to develop these standards. An apex committee has also been formed at the Department of Information Technology. But we see that there is a long road ahead of us. All the projects have different concerns, and focus of their own. Example: some e-Gov projects have been initiated where storage is a top priority, while others have security as a major concern to address. Thus, each and every project is going to have its own strategy," notes Chandrashekhar. Adds Kaushal, "The scale and complexity of solutions, and different states having different standards, are creating challenges for private players while working on these projects."

According to Paul of HCL, "Every e-Governance roll-out is a learning opportunity. We go with a pre-conceived idea about the use of computers in metros, but the real world is quite different. Also, it is very encouraging to see the difference that these projects are able to make to the lives of people. Regional language computing is one of the challenges we face, but going forward the use of Unicode and multi-lingual software should be able to address these challenges effectively."

The Indian government is taking greater cognisance of the benefits of technology across all government functions and state machinery. Over a period of time this pace of ICT adoption will increase exponentially and drive greater benefits to the common man. The full-fledged participation of governments as well as private players will definitely bring success to the various missions announced by different governments.

Cultural Dimensions of E-Governance

- The Government of India has declared year, 2001, as the year of e-governance. The Government of India as well as many state governments are taking initiatives to introduce e-Governance in their respective areas. E-governance basically amounts to applying information technology (IT) in government functions. In short, e-governance is IT enabled governance.
- E-governance, brings a major change in the way the government functions. So far government has been accustomed to conduct its operations on paper. Cynics have observed that the 'paperless office' in government organisations normally results only under two circumstances. Firstly, when there is no budget to buy paper and secondly, when the paper is misplaced. But any serious attempt at application of IT in government functions will have to take into account the hidden resistance to the whole process. Change is always resisted and this resistance, among other things can come from the culture of the government organisations.
- There are at least four sources, which gives rise to cultural resistance to e-governance. The first is the government culture of secrecy. The culture of secrecy is further strengthened by the Official Secrets Act. One of the issues, which social activists and NGOs have been highlighting, is the need for bringing greater transparency in government functioning and also empower the citizen by way of enacting the Freedom of Information Act. Some states like Tamil Nadu, Goa and Karnataka have passed the Freedom of Information Act. The Government of India

is also considering such an Act. If there is greater application of IT in government operations, then access to information to the public also will become easier. But the question is can the extensive use of IT take place against a culture of secrecy? There could be resistance both overt and covert on this issue. In fact, the application of e-governance itself should be looked upon as a means of bringing greater transparency in the system. This could be even one of the stated objectives of e-governance like the entire purpose being to achieve SMART– small, moral, accountable, responsive and transparent Government.

- The second source of cultural resistance is from corruption. Red tape and delays have bred corruption and in fact the lack of transparency also has been a source of corruption.

  E-governance tries to remove these basic factors that promote corruption in the governmental system. But vested interests who are deriving benefits under the present system may resist the extensive application of e-governance because of this factor. If government were to announce that one of the objectives of e-governance is also going to be a more transparent and to that extent a faster moving and less corrupt government, there will be widespread public acceptance and welcome to this measure. Public opinion therefore can thus be generated to overcome this aspect of resistance to e-Governance.
- The third source of resistance is the culture of seniority, which is very rigidly observed in government. When it comes to IT, it may be the junior officers and staff who may be more familiar and comfortable with computers and IT systems but it is the seniors who take all policy decisions. For example, in one of the states an initiative was taken to have a computer based centre at the heart of the city whereby citizens dealing with seven organisations of the state government could go and make their payment instead of going to the individual offices. The process also was faster.

- Even though the centre was functional for more than two months, none of the secretaries to the government concerned with those seven departments ever took the care to go and see the working of the centre. This is a classic example of the neglect and indifference if not the total lack of interest in the whole effort at introducing e-governance. On the other hand, a suggestion was made that the introduction of the computerised centre amounted to front end computerisation where the department interacts with the citizens and back end computerisation should take precedence for effective e-governance. This was a classic example of trying to kill a good idea by coming up with a better idea so that ultimately even the good idea is not implemented.
- The fourth source of cultural resistance for e-governance would be sheer lack of imagination. The emphasis in government most of the time is on red tape, procedures and systems. Doing a thing rightly is more important in government than doing the right thing. Innovation is the key for success and generally the bureaucratic culture discourages innovation. On the other hand, if e-governance has to succeed, we need a lot of innovation. How are we to overcome this problem?
- Perhaps the best solution would be to first identify the four sources of cultural resistance and initiate specific action so that the appropriate environment for success in e-governance is created. The problem of secrecy can be overcome by either a more liberal freedom of information act or a simple device by which there could be small negative list of items that could be secret and the rest could be accessible to the public. This could be done by a regular administrative order. The issue of corruption can be overcome by mobilising committed public servants within the system and also cultivating public opinion. The issue of seniority can be overcome by adopting models similar to that adopted by Sam Pitroda when CDOT was set up by which even within the government system, an organisation on a mission mode can be created.

However, the problem in e-governance would be that while introduction of the systems can be done through a mission mode organisation, the operations have to be also seamlessly integrated with the general routine of the government system. In this context, encouraging knowledgeable youngsters and identifying champions for IT in governance at fairly senior levels in government may be the way out. As regards innovation, the change made for overcoming the problem of seniority itself would have created the requisite environment.

- Nicholas Negroponte, the digital visionary, addressing recently a meeting organised by the CII made a perceptive comment. He said that when it comes to development, culture was more important than infrastructure. He pointed out that France was 14 times bigger than Norway and had invested the most in telecommunications than any other country but Norway had more Internet users than France. This, he said, was the result of the cultural difference between the two countries. Norway had a decentralised culture whereas France had a culture of centralisation.
- The Indian economic reforms have just passed a decade and various commentators have highlighted different aspects of the reform process. It has been, according to some, like the walk of a drunkard, two steps forwards and one step forward. Some have also highlighted how the bureaucratic culture of control, the legacy of the permit licence raj and of course corruption has come in the way of development. Some others have highlighted that we are not developing fast enough because we do not have enough infrastructure and what is worse, we have not been able to attract substantial investment in infrastructure.
- The insight provided by Nicholas Negroponte must be exploited to the full if we want the economic reform process to succeed in India. We do not have much of financial resources and we have not been able to attract substantial investments in infrastructure. Even if by a

miracle we are able to attract substantial investment in infrastructure to meet fully the projections made by the famous Rakesh Mohan Committee Report, if the experience of France and Norway is something to go by, we may still not make it, when it comes to India becoming a tiger in terms of economic development.

- On the other hand, culture is something which we can try to change. Culture is essentially the mindset and the way of doing things that flow from it. For example, we are good at talking but when it comes to implementation we are 'action shy' to quote the words of Paul Appleby, the expert engaged by Jawaharlal Nehru to study Indian administration in the fifties. We do not walk our talk. Can we really change our culture?
- Rajaji observed that the charcoal we use in kitchen is carbon, the graphite in the pencil is also carbon and the diamond in the ring we wear is also carbon. If a lifeless substance like carbon, depending upon circumstances can be a low value item like charcoal, middle value item like graphite and high value item like diamond, how much greater is the potential of the sentient human being?
- V. Krishnamurthy when he was Chairman of SAIL brought about at the organisational level cultural changes by systematically exposing a very large number of managers at different levels to HRD experts. Jack Welch has achieved the same by his workouts. If we want to get out of the present sense of gloom and doom in our economy, we should systematically focus on bringing about a cultural change which in turn will also act as a catalyst for more rapid economic development.
- The most dangerous cultural aspect of our country today is corruption. Economic reforms represent a conscious shift from socialism to capitalism. Nevertheless, what we have, as C Ram Manohar Reddy pointed out in a recent article, is corrupted capitalism. According to him, in the aftermath of the East Asian Crisis of 1997, crony capitalism was blamed for the failure. What is beginning

to mature in India is a different and a larger phenomenon that lends to another but less attractive alternative term, corrupted capitalism. In this uniquely Indian phenomenon which unlike in China, Indonesia and Russia is blessed here by the established democratic process, political corruption and market capitalism thrive by feeding each other. Capitalism grows by not through competition in the market but by excluding competition through large scale corruption of the policy maker and administrator in high places. This is what changing the rules of the game in the new sector means. Likewise the stunting of the public sector, the sale of state assets to preferred buyers and the provision of subsidised finance to favoured enterprises all for a price have been giving a new meaning to capitalism, Indian style in the 21st century".

- Our focus on bringing about a cultural change must therefore be an outright attack on the culture of corruption by bringing in transparency. This change can be brought about by the civil society using the four instruments that are available with them. The first is judicial activism. The second is the use of anti corruption agencies within the government like the CVC. The third is direct action like what was done by on-government organisation the Lok Satta in Andhra Pradesh to check rampant tampering of meters in the petrol pumps in that state. The fourth is creating public opinion by extensive use of electronic and print media. After all, in a democracy no political party can ignore public opinion.
- Corruption flourishes because of two elements of our culture of governance. The first is the lack of transparency. We must use extensively information technology to bring in transparency. Some success has been achieved in states like Andhra Pradesh. The second element is delay. This delay is also partly because of the tendency of our public servants not to take decisions. While the corrupt are prepared to take even the most brazenly illegal decisions propelled by the viagra of the right amount of bribe, many honest public servants contribute only delay by not

taking decisions at all. After all, we had a Prime Minister who reportedly said that not taking a decision itself was a decision! This culture of non-decision making can be changed by undertaking systematic behaviour modifications exercises like what V Krishnamurthy did in SAIL.

- If we focus systematically on bringing a culture change in our system of governance, we can take India out of the present impasse and unleash the animal spirits of the entrepreneurs of India which Dr. Manmohan Singh invoked in his first budget.
- The Government of India have declared 2001 to be the year of e-governance. So far Governments at the Centre and States have worked on paper based systems. E-governance means that government must be able to use IT extensively in all their functions.
- The application of IT in government has been going on at different organisations for more than two decades. It was Rajiv Gandhi who focused attention on the use of computers which started the process of application of IT in government. The tremendous success of India in software exports has sharply focused attention of even the political leadership on the potential of information technology. The Prime Minister has observed that IT will be India's Tomorrow.
- Between the grand vision of e-governance and its actual realisation, there is a big shadow. Generally, for implementing any policy financial constraints are a major problem. Fortunately, the problem of the funds needed for investing in IT systems has been overcome by the broad acceptance of the policy of a certain percentage, say 3% of the budget being reserved for investment in IT systems. It is actually the government culture of secrecy, seniority and corruption which is coming in the way of rapid realisation of e-governance. There is also the problem of transition of any system which is based on paper to application of IT. Those who have knowledge of IT do not have the domain knowledge of the organisation and those

who have the domain knowledge do not have the requisite knowledge of IT.

- If we look at the current exercises going on about e-governance, we find that the progress is uneven. In this context, perhaps a cafeteria approach may be the most effective strategy to follow. We need not try to get reengineer the entire government systems and achieve the total replacement of the system of governance by application of IT. Depending upon the initiative of the champions in every organisation, we may try the following different recipes which seem to be working in our country.
  (i) The easiest recipe is making citizens interface with government easier. In Kerala the citizen's interface with the public organisations has been made easier by the concept of Fast Reliable Instantaneous Delivery of Services (FRIENDS). Seven departments and organisations were identified and the public who had to pay dues like electricity or water bill, property tax, university tax, road tax etc. could, instead of going to the various offices, go to the FRIENDS centre, which was located in the heart of the city and complete their transaction within a very short time because there was a bank of 20 computers available manned by officers and staff of the respective organisations. What this means in essence is a front end computerisation instead of the total computerisation. Perhaps this is the easiest step that could be taken and the great advantage is for the money and manpower invested, the satisfaction of the citizen will be quite high.
  (ii) The second stage is the back end computerisation and here there could be a massive effort to transport all the information that is available on paper into the computer readable form in one short sharp step. Here again Kerala has shown the way. They are using the women's self help groups to undertake this task. The advantage is that without having to create additional staff and also spend more from the budgetary

resources, the objective of empowering the women by providing employment is achieved along with the transition from paper based system to computer based system. This could perhaps be easily reproduced in other states also.

(iii) The third recipe is total system reengineering of government systems which has been tried in Andhra Pradesh in the Twins project. 34 types of certificates and services which are given by different departments are centralised in the 18 centres of Twins. Advantage was taken of the Election Commission's initiative some years back for providing election ID cards. That information has been modified so that very shortly, throughout Andhra Pradesh, right up to the mandal level, new IT services will be available. This will call for a large degree of commitment.

(iv) The fourth recipe is to take individual departments and see how extensively they can be computerised. For example, in Gujarat, there has been a very successful application of the smart chip so far as the transport department is concerned. At the national level, nationalised banks have by and large achieved the objective of the directive given by the Central Vigilance Commission to computerise at least 70% of their business by January 2001. 24 out of the 27 banks as of now have achieved this objective and the banks are contemplating the next stage of bank wide computerisation moving away from the nearly three decade old three decade branch wise computerisation approach.

(v) Yet another successful recipe is the Gyandoot model of Madhya Pradesh where IT has been taken to the rural areas that too in the tribal dominated district of Dhar by imaginative District Officers providing very valuable service by way of an intranet connecting 31 villages. Here again the existing funds under the various rural development schemes have been utilised. While 20 centres are funded by government, the

remaining are on a basis of franchise and employment opportunities have been created in rural areas by using IT. This success has already inspired a collector in Himachal Pradesh to replicate the experiment in her district.

(vi) The Central Vigilance Commission's initiative to publish the names of the charged officers who have been found guilty in departmental inquiries and against whom major penalties have been recommended has shown how IT can be used to check corruption. The introduction of transparency in government system has a healthy impact in checking corruption and empowering the citizen.

- The basic strategy for achieving e-governance therefore is obvious. There are strong cultural factors of resistance to e-governance but the hope is in the younger officers who are technology friendly. A cafeteria approach by adopting a model that has been successful may be better rather than trying to achieve what has been done perhaps in Andhra Pradesh which is perhaps the most advanced so far as the application of IT is concerned. Mao Tse Tung said that a banquet can be eaten only mouthful by mouthful. His words are very relevant to us today.
- The cultural dimensions as well as options available to us has been plzced before. Ultimately success depends upon our capacity to put in practice the eternal advice of the Taitreya Upanishad. Let us come together, let us enjoy together, let us strengths come together, let us move from darkness to light, let there be no poison of misunderstanding or hatred. That is the way for progress.

E-Governance: Bangladesh Perspective

Governments, much like businesses, have two major efficiency criteria. First, in the short term it has to reduce the cost of production of the commodities that it produces and second, in the long term, it must also improve the shareholders wealth by increasing its value in the market. In case of governments, both the stakeholders and consumers are the

same, the people. And the market also constitutes of roughly the same group of people.

Put in context, it can be said that, the government must deliver its services at the least possible cost and, in the long run, it must earn the confidence of the people by providing the services that people want. A properly designed and implemented e-governance system has the potential to help government to fulfil both the efficiency criteria.

In the Bangladesh context, the following can be the most direct gain that e-governance can bring to the country.

- *Enhance the Transparency, Accountability and Efficiency of Government*: e-governance provides the right tools for monitoring of the government activities by its citizenry by allowing the government to follow predefined and transparent processes whose quality and efficiency are measurable.
- *Greater Decentralization of Governance:* e-Government systems make decentralization of government services and makes decentralized decision-making easier.
- *Makes ICT Relevant to the Masses:* e-Government systems make ICT relevant to the masses as its benefits gradually extend to citizens and communities throughout the country.
- *Private Sector Development:* e-governance systems allow for easy accessibility to government services and allow businesses to access government services on the fly thereby enhancing overall competitiveness of enterprises in a country.

E-governance and Bangladesh: Challenges

Technological Aspects: As is in most of the Least Developed Countries, Inadequacy of ICT infrastructure is a common problem in most government offices of Bangladesh. This situation is further compounded by the marked absence of technical infrastructure planning and suboptimal utilization of whatever infrastructure is available.

The other challenge is in ensuring 'sustainability' of ICT infrastructure. Often due to myopic planning of development

projects lead to a lack of integration of ICT based systems into the core business processes of an organization and the long term financial sustainability aspect of ICT infrastructure is ignored.

Human Resource: Due to lack of institutionalized means of developing related skills many e-Government implementation projects suffer from lack of skilled human capital. Only ICT skill courses available for the civil servants are not enough to bridge the gap. There is not much done for the civil servants to enhance their 'soft-skills' associated with managing implementation of e-Governance systems. Government institutions may explore introducing courses on 'change management', etc. to address such deficiencies.

Absence of incentive for acquiring ICT skill is also considered as one of the reason for lacking of ICT skilled human resources in the government. Indeed, in most government offices the use of IT is mostly self-motivated and a matter of individual self-development.

Economic Aspects: The economic/financial challenge for e-governance system implementation in Bangladesh is two pronged. First, like most developing countries, Bangladesh faces difficulties in investing large sums in e-governance system from its own coffer. Absence of pro-private sector policies impedes this other potential source of investment.

There seems to be a marked need for building capacity of the civil servants to conduct cost-benefit and results-resources benefit analysis before approving e-governance projects. Indeed the lack of managerial acumen and technical know-how to analyze the cost-benefit scenario and return on investments to assess financial sustainability of a project is hurting the country's e-governance aspirations. It is also an important reason why the private sector remained as a sceptic bystander rather than a active partner in e-governance.

Social Aspects: In Bangladesh, a country where 'disparities' between haves and have-nots are ever increasing, introducing ICT in the governance mechanism faces the challenge of ensuring equitable access to e-governance services by all strata of the society. It is essential to create public awareness with

regard to e-Governance services that are available and could be made available to everyone.

The other social aspects that come under e-Governance challenges are lack of literacy and a weak basic education standard; standardization of Bangla for official use; and the 'Brain Drain' of ICT skilled human resources from the government.

Administration: More needs to be done to sensitize senior government officials with regard to e-governance and the benefits inherent to it. It is mostly due to this lack of awareness that e-governance systems lack buy-in from the senior management of government organizations. Such lacking of acceptability often means lack of sustainability of the system and even failure to implement such a system.

E-governance requires rethinking the standard operating procedure. The existing administrative rethinking mechanism is not aligned with e-governance activities and plans. Such lack of coordination between administrative reform and e-governance is another challenge that we are facing too.

Finally, in absence of central e-governance coordinating and monitoring entity the tasks of prioritizing and controlling the quality of the e-governance projects remained as a challenge in Bangladesh.

Legal Framework: The nation still needs to strive to have an operational regulatory / legal framework including relevant Cyber Laws. While the ICT Act has been approved recently, the work of drafting the bylaws (19 of them) and rules might take still some time.

Local Content : There is a dearth of local content available in the country. This plays an especially important role in the government since even if an officer is connected to Internet the relevant knowledge resources available to him is limited. This often limits the need or wants on the part of government staff to access the Internet as a part of their normal working routine.

Way Forward: Need for National Strategy: The single most important lesson learned during almost two decades of e-governance initiatives of the country is 'e-governance is a

strategic choice not an operational alternative for service delivery'. A nation needs to be sufficiently 'ready' before shooting for e-governance objectives. A national e-strategy is required to address the following fundamentals elements of e-governance readiness.

- *E-governance Awareness among Public Servants:* Training courses for government officials should move beyond the office productivity suite to conceptual courses that enable them to conceive ICT as a strategic asset rather than operational tools.
- *Facilitate Public Private Partnership Model to Work:* E-governance initiatives are often capital intensive and have to compete with projects addressing other national development priorities. Additionally, e-governance projects are often riskier than more traditional development projects. Hence, most countries that are seriously pursuing e-Government have partnered with the private sector to share the costs and risks of starting and running e-Government projects. A concrete policy framework and directive is needed to engage the private sector for Bangladesh too.

In this context, the government needs to look into the possibility of outsourcing most of the service delivery and substantial part of service production function to the private sector.

- *Enhance Access to ICT Tools for Citizens*: the government needs to ensure equitable access to government services delivered online to all potential users. It is therefore important for the Government to invest resources and introduce policies to extend access to ICT throughout the country. Participation of public sector needs to be ensured to speed up infrastructure roll out. Innovative means of content delivery like mobile telephony, community radio, etc. based solution should be encouraged and explored.
- *Creation of Local Content:* The government should take the lead in creation of locally relevant content in the local language. At the same time, preservation of local knowledge in easily understandable forms must be

encouraged. In the backdrop that most of Bangladeshi's cannot read and comprehend written text strategies to encourage voice and video data should be developed and implemented.

- *Adopt Open Standards and Open Source Solutions:* It is highly unlikely that the country can embark on a single project to develop both its hardware and software solutions and can only address these needs gradually. To enable the nation to undertake small but manageable projects and gradually build up its e-governance maturity, it is important that the nation adopts an open architecture for easy interoperability.
- *Plan for the Long Term:* E-governance systems bear fruits only in long term. Failure to recognize this long gestation period often results in unnecessary frustration and experimentation resulting in the loss of resources and motivation among the users.

Successful e-Governance Initiatives: Mixed with failed or not so successful e-governance initiatives are a few truly successful initiatives that demand special mention here (in alphabetic order).

- *Automation of Internal Processes*: Bangladesh Bank began to computerize its functions almost at the same time most government offices started investing in automation. However, the Bank is only among the handfuls that have been successful in integrating ICT into the core business processes of the institute. Today it is one of the most fully computerized public institutions in the country. The current system actually automates most of the Banks operational processes and some of the most important strategic processes including monitoring of commercial bank transactions.
- *Electronic Birth Registration System*: Electronic Birth Registration System was introduced by The Rajshahi City Corporation (RCC) and the Local Government Division of the Ministry of Local Government with technical and financial support from UNICEF. This is probably the best local level e-governance example of

Bangladesh where a local government body, in their own initiatives and leadership and with support form a development partner took such a bold step forward. The system also doubles as an immunization management system. Once registered, the system also generates an immunization schedule for every child. To system generated ID is also used to get admission in the public schools of the city.

- *Financial Management System*: On the backdrop of not to successful project such as reforms in the Budgeting and Expenditure Control (RIBEC 1 and RIBEC 2) and somewhat successful RIBEC 2A and then RIBEC 2B , Ministry of Finance has gradually and surely the ministry of Finance now have developed a quality MIS system that is successfully used for budget planning, sensitivity analysis, impact analysis, financial projections and other core processes of the ministry.
- *Government Forms Online*: Accessing government forms online is made possible by the Prime Minster's Office of Bangladesh though a project funded by UNDP Bangladesh. This not only saves time but also the cost and hassles associated with the travelling to the government offices located at a distance.
- *Hajj Web Site*: The Ministry of Religious Affairs, GoB introduced the Hajj Web Site in 2002 to service ten and thousands of pilgrims who go to Mecca to perform holy Hajj. During the Hajj, the website also acts as a important information portal for the family members of the pilgrims and other interested persons and organizations. One of the best examples of a Public-Private Partnership project, the site provides timely and reliable information to a large segment of the population.
- *MIS for Project Management and Transparency*: Department of Roads and Highways, Ministry of Communication, GoB, developed this MIS as a component of a World Bank funded project for the institutional development of RHD. The e-Government initiative of RHD involved the launch of a website that provides a

variety of information, data and notices to users. Website users include the private sector, related government offices, ordinary citizens, and donor agencies.

- *National Board of Revenue*: Several development projects like Asian Development Bank funded 'Customs Administration Modernization Project', International Development Agency funded 'Excise, Taxes & Customs (ETAC) Data Computerization Project', World Bank funded 'Modernization and Automation Project' etc. much of the core processes of NBR and some of its citizen services has already been computerized and implemented successfully.
- *Personnel Database*: The Personnel Management system (more of a database with some analytical reporting) of the Ministry of Establishment is probably the oldest e-Government initiative that is still is in use and in demand. The database in maintained by the technical personnel with in the ministry and maintains the personal information card for each government employ of the 'Administration' cadre including their respective annual confidential reports.
- *Railway Ticketing*: Technically, Railway ticketing might not be a simpler e-Government project but from people's convenience perspective, this is one of the important one. Bangladesh Railway outsourced the job to a local IT vendor. With a few technical hiccups the system was put to operation in 1996. The vendor owned operated and maintained the system till early 2002. The system was than transferred to Bangladesh Railway, who later decided to outsource its operation to another private vendor.

2

Good Governance and E-Governance

We always welcome an occasion to discuss how our lives may change due to technological development. It is evident that rural India is contributing two-thirds of the total nation's population; thus, this heart of India requires heavy enforcement of prolific strategies, which could uplift the scenario of the nation as a whole. IT has become the chief determinant of the progress of nations, communities & individuals. It is considered crucial that the improvements in our society benefit all citizens. No single group should be ignored or favoured. The only way is "to make it better for all".

It may seem paradoxical that modern information technology (IT) has associated in our minds that developed country markets and capital-intensive methods of production have any relevance for a country where many millions still lack basic needs. Nevertheless, there are many efforts underway in India and other developing countries to demonstrate the concrete benefits of IT for rural populations and to do so in a manner that makes economic sense. This chapter is very much confined only to rural development. Section 1 provides conceptual issues/ factors driving for IT transition in rural development. Section 2 offers a broad discussion of the methodologies implemented by governmental and non-governmental policies. The ending section goes through some solutions for these methodologies for a better successful implementation of IT in rural development.

AVANT garde Governments in States such as Andhra Pradesh, Karnataka, Madhya Pradesh and Tamil Nadu are going full steam ahead to complete the process of wiring all

public offices right down to the block, if not village, level so as to take services closest to the people and provide them easy and instant access to information.

Other State governments, such as those of Gujarat, Haryana, Maharashtra, Punjab, Rajasthan and West Bengal, though not in the same league, are gearing themselves up to the same end. Stirrings of awareness of the power of information technology are to be seen even in Uttar Pradesh.

This is all to the good, assuming, of course, the system works at optimal efficiency and is kept in good shape and constantly updated. At the very least, citizens can have their needs fulfilled, just the same way as the US President, Mr. Bill Clinton, got his car driving licence in a jiffy when he was in Hyderabad last March. Officials, too, can keep tabs on the speed of disposal of requests and applications for various services, besides monitoring the current status of availability of essential commodities, the stocking of fair price shops, provision of medicines and equipment and accessories (such as x-ray plates) to primary health care centres and hospitals, progress of schemes and execution of projects.

A greater openness and accountability can be brought into the working of governments by feeding into the databases full particulars of tenders of all major purchases, the results of their evaluation and placement of orders; the time and cost overruns and the reasons; monthly management accounts of the departments and public sector undertakings, and the explanation for deviations from the budgetary norms; pendency of letters from citizens district-wise with reasons; and the like.

It is not clear from the PR literature on the subject put out by the various State governments whether their conception of e-governance will enable citizens to ask questions and get answers within a reasonable time from the high and mighty of the governing class. In the UK and the US, any query to even the PM's office or the White House is answered by return e-mail, in contrast to conditions prevailing in India.

For instance, in a State such as Tamil Nadu, touted as well-governed, an ex-Secretary to the Central Government and former officer on special duty, with the status of the chief

secretary in the Chief Minister's secretariat, was forced to complain openly in a letter to the Press that the Chief Minister, his colleagues, the Chief Secretary and Secretaries down to neophyte Collectors blithely ignored an important communication addressed to all of them which was, in fact, meant to improve the quality of governance. How can the subordinate level functionaries such as Tahsildars and Block Development Officers be blamed if they choose to follow the bad example thus set for them by showing the maximum possible contempt for ordinary citizens?

The crux of any governance, including its e-version, is sensitivity, empathy and respect for the people. The absence of these qualities will only reduce all the fanfare over e-governance into a farce.

Impact of Technology

- Promotes regional coordination of the Internet.
- Establishes pilot projects.
- Uses communication for developmental approach.
- Assist stakeholders in advocating for Internet service provision and telecommunication infrastructure.

Factors Driving it Transition in Rural: IT in rural approach is concerned first & foremost to people. It seeks to gain an accurate and realistic understanding of people's strengths and how they develop into positive livelihood outcomes. It is important to note that IT can generate multiple benefits in sectors so as to:

Provide better Usage of Natural Resources: Agriculture is the main vehicle, which needs a rural policy to be delivered. IT increases shareability of information typically used for improving income-earning opportunities (e.g., weather news for farmers, to enhance sustainable growth in farming).

Enhance Economical Status: For both government and private provision, one of IT's main direct benefits is in increasing efficiency by economising on resource use in the operation of firms as well as in market transactions. There is a need for better matching of buyers &sellers, creation of new markets.

Education & Employment: Not only is education important, computer education too is critical considering the role that technology plays in our lives, and is likely to play in the coming years. Moreover the youth with adequate computer knowledge could be employed in jobs like data entry and other related areas, providing the prospect of using technology.

Administration (Governance): A Government is very much like a large multi-location Enterprise. If we think of intelligent, real-time enterprises, we can also apply the same ideas to enable intelligent, real-time governance. A real-time enterprise, as Ray Lane says, is a company that uses Internet technology to drive out manual business processes, to eliminate guesswork, and to reduce costs.

Health Care: The care for rural residents in their own home as far as possible is sometimes difficult to implement due to difficulties in recruiting and retaining staff in this poorly paid sector.

Methodologies Implemented

Some of the methods implemented by governments of various states:

E-Seva: The Andhra Pradesh government has launched E-Seva with the aim of providing "one-stop non-stop service" to the citizens. It is, perhaps, one of the most ambitious projects in India, in the realm of government-to-citizen (G2C) services. E-Seva offers a wide spectrum of services ranging from Payment of Utilities Bills, Certificates, Permits / Licensees, Transport Department Services to Reservation, Passport Applications and Downloading of Forms. The government is planning to, "reach out up to all the 1,100 mandals (blocks) across the State, [and] it is proposed to deploy up to village in a phased manner."

Bhoomi: The Karnataka government launched bhoomi to create a service to computerise land records and make them available to the people. Bhoomi is a self-sustainable e-governance project for the computerised delivery of 20 million rural land records to 6.7 million farmers through 177 Government owned Kiosks in the Indian state of Karnataka, which has eliminated red tape and corruption in the issue of land title records, and

is fast becoming the backbone for credible IT-enabled Government services for the rural population. Rural land records are central conduits to delivering better IT-enabled services to citizens because they contain multiple data elements: ownership, tenancy, loans, nature of title, irrigation details, crops grown etc. These records were hitherto maintained manually by 9,000 village officials who often extracted a price for issuing copies. Under the Bhoomi ("Land") dispensation, computerised kiosks offer farmers two critical services (currently): procurement of land records and requesting changes to land title. With 20 million records legally maintained now only in the digital format, Bhoomi has brought the power of IT to dispel the insecurities of the farmers in 27,000 villages. To ensure authenticity of data management, a Biometric Finger Authentication system has been used for the first time in an e-governance project in India. To make the project self-sustaining and expandable, Bhoomi levies user charges.

Information Village: The M.S. Swaminathan Research Foundation has set up an Information Village project in Pondicherry. In an experiment in electronic knowledge delivery to the poor, they have connected ten villages near Pondicherry in southern India by using an advanced technology and the entire project draws its sustenance from the holistic philosophy of Swaminathan, which emphasises integrated pro-poor, pro-women, pro-nature orientation to development and community ownership of technological tools against personal or family ownership, and encourages collective action for spread of technology. Value addition to the raw information, use of the local language (Tamil) to facilitate illiterate users) and participation by local people right from the beginning are the noteworthy features of the project. Information provided in the village knowledge centres is locale specific and relates to prices of agricultural inputs (such as seeds, fertilizers, pesticides) and outputs (rice, vegetables), market (potential for export), entitlement (the multitude of schemes of the central and state governments, banks), health care (availability of doctors and paramedics in nearby hospitals, women's diseases), cattle diseases, transport (road conditions, cancellation of bus trips),

weather (appropriate time for sowing, areas of abundant fish catch, wave heights in the sea), etc.

E-Choupals: ITC is setting up E-Choupals across the agricultural belt in India to "offer the farmers of India all the information, products and services they need to enhance farm productivity, improve farm-gate price realisation and cut transaction costs. Farmers can access latest local and global information on weather, scientific farming practices as well as market prices at the village itself through this web portal—all in Hindi. Choupal also facilitates supply of high quality farm inputs as well as purchase of commodities at their doorstep." In Phase I, the goal was to create a physical infrastructure of E-Choupals at the village level and create local level ownerships through the identified Sanchalaks. In Phase II, the goal was to get the farmer registered and transacting by selling directly to ITC Ltd. through the virtual market. In Phase III, the goal was to create a full fledged meta-market. The database, along with identification provided by smart card would enable support for online transactions the total network already include 1,286 kiosks, reaching almost a million farmers across some 9,000 villages. Enthusiasm from farmers is helping ITC to rapidly scale up its network. Current plans include diversification into a wider variety of crops in 11 other states across India. Expanding at a rate of 3 to 4 kiosks a day, the company expects to have 20,000 choupals covering 100,000 villages, or one sixth of rural India, within 10 years.

Non-Government Some of the non-government projects include:

Tarahaat and Drishtee: Tarahaat and Drishtee are two projects being driven by non-government organisations, focusing on creating entrepreneur (franchisee) driven information kiosks and community centres in rural areas.

Tarahaat, named after the all-purpose haat (meaning a village bazaar), comprises "a commercially viable model for bringing relevant information, products and services via the Internet to the unserved rural market of India." It is set up as a partnership between Development Alternatives (DA), an NGO focused on promoting sustainable development in India,

and its rural marketing arm, Technology and Action for Rural Advancement (TARA). Tarahaat combines a mother portal, TARAhaat.com, supported by franchised networks of village cybercafes and delivery systems to provide a full range of services to its clients. The subsidiary units include TARAdhaba (village connectivity), TARAbazaar (access to products, services), TARAvan (delivering goods), TARAdak (communications), TARAguru mentoring and consultancy for mini- enterprises), TARA Ascouts/TARA reporter (bazaar), TARA card (credit card facility.)

Drishtee is "an organisational platform for developing IT enabled services to rural and semi-urban populations through the usage of state-of-the-art software. The services it enables include access to government programs and benefits, market related information, and private information exchanges and transactions," similar to Tarahaat.

Future Trends

IT can be better applied to enhance the rural development, improve the standards of living as a whole, with concerns for commitment in health, education, and governance:

IT in Rural Health Care: The future of IT in rural health network can be viewed in terms of phases of communication enhancement. In the first phase, we should expect to see even more use of email as a principal means of communication. In the second phase, enhanced communication is interacting with the public through electronic media. One possibility was to provide information to the public in their area, as a resource to find resources such as e-health and by using a website to do that. A third phase of enhanced communication is using IT to administer health services. Three networks discussed using IT for clinical purposes. One is clinical application, which gets beyond patient information, especially around drug regimens and things like that. A second use in telehealth included focused on the transmission of data and imaging between practitioners. The third is a desire to set up telehealth with a large regional hospital for the purposes of accessing physicians in the emergency room to help with interpretation of X-rays.

IT in Governance: The villages are part of the real-time governance supply-chain. A supply chain is only as good as its weakest link. Today, isolated villages are the equivalent of unconnected small and medium enterprises in supply chains. The Tele Info Centre and Village Info Grid bring the villages into the governance network, enabling a two-way near real-time flow of information. They form the endpoints, the spokes, and the front office. They need to be complemented with the automation of the back-office—the heart of the government, which lies in the state capitals and district headquarters. What governments need is a four-step action plan to move towards the vision of architecting intelligent, real-time information flow architecture: Massaging and Internet Access for all employees: Every government employee should have an email ID and access to Instant Massaging. Each of the government locations should be networked. Computing for all: Every government employee needs to have a computer on their desk. The same ideas that are applicable for a Tele Info Centre (low-cost computers, server-centric computing, open-source software, and support for English and local languages) can be used to build out the computing infrastructure. Collaboration and Knowledge Management: The next step is to make people individually more productive and make teams work together more efficiently. This can be done via the use of workflow software and tools to aid decision-making. Business Process Automation: The essence of governance is about interacting with citizens and businesses (akin to customer relationship management). The focus needs to be on the core business processes, creating an event-driven architecture with the focus being not on routine information management but on handling exceptions.

IT in Education: Education plays a paramount role in the process of economic development. Besides being instrumental in development, it is also an end in itself because it helps people lead better lives. For broad-based sustainable economic development, primary education is critical. Neglect of primary education is endemic in developing nations. Primary education is a public good. To briefly review the broad scope of the problem of primary education, literacy is only 60% in rural India. For rural areas are male literacy is 71% and female is

47%. About 36% of all 7-14 year old children are illiterate. That is, the total population in rural areas that needs primary education is 150 million. To provide primary education, India requires seven million teachers if one were to have a 1:50 teacher to student ratio.

Not only, that number is formidable, the problem is compounded by the fact that these teachers are mainly required in the rural areas where the current number of qualified teachers is extremely low. Not only is education important, computer education too is critical. While no computer can replace a good teacher, it is not always possible to get good teachers in schools in developing nations, especially in the interiors. This is where computer-enabled education can complement the teacher in the classroom. Besides, a "digital library" and the Internet can help enhance and widen the learning process. A school is an ideal location for a Tele Info Centre (TIC) because it is already seen as a bastion of knowledge. The TIC can be located at every primary and secondary school. During school hours, the computers are used to complement the teacher in providing IT and IT-enabled education to the students.

After school hours, the centre can provide community services, some of which can be priced. This approach has multiple benefits:

- Computers will attract students to schools. As has been said: "You bring computers into schools so that you bring children to schools." During school hours, the multiple computers in the TIC become educational terminals for the children, complementing the teacher.
- After school-hours, the computers could be used for various community services, provide literacy for the village residents, creating employment opportunities, thus providing means for additional revenue serving the needs of the village as a whole. By making computers available in schools at the point of delivery of education, TICs thus play a critical role in the facilitation of primary and secondary education. In addition, the same platform can be used for delivery of adult and vocational education. The Rural Infrastructure and Services Commons (RISC)

centre, which would be within a distance of 10-15 kilometers of the TICs, would function as a local support centre.

The RISC is where teacher training can be conducted on a regular basis, given the current state of the infrastructure in villages.

EDUSAT: Nearly 3 decades after it carried out the world's first effort to reach instructional programmes to far-flung villages using direct TV broadcasting over satellite, the ISRO (Indian space research organisation) has sent aloft EDUSAT. ISRO also initiated projects for distance education and training, the launch of EDUSAT could lead to revolution in the education sector. Students in rural areas stand to benefit the most; it will be very beneficial considering the shortage of teachers especially in frontier areas of technology along with primary education.

E-Government benchmarking means undertaking a review of comparative performance of e-government between nations or agencies. E-government benchmarking studies have two purposes: internal and external. The internal purpose is the benefit achieved for the individual or organisation undertaking the benchmarking study. The external purpose is the benefit achieved for users of the study.

Little or nothing is made explicit about internal purpose in benchmarking studies. It could be synonymous with the external purpose but equally it could relate to a desire to raise the profile or perceived expertise and legitimacy of the individual or organisation in e-government, or it could relate to a desire to attract funds or win additional e-government business. Where a benchmarking report has a sales and marketing function, this could be in tension with development goals. At the very least, it makes sense to ensure that study implementers are themselves clear about their internal purpose even if this is not published.

This paper provides a series of recommendations based on good practice or innovative practice, backed up by a set of conceptual frameworks and statistical findings. Checklists are provided for those planning and for those evaluating e-government benchmarking studies.

E-Government for the New Millennium

Information Technology is changing the way the society functions. Internet is the biggest revolution in human history. The impact of IT can be felt in all economic and social activities in every conceivable manner. The convergence of all forms of communications on the digital playfield is opening up immense new possibilities of achieving speed, versatility and space-time independence. Governments are no exception to this phenomenon. In the post liberalisation era governments across the country have been engaged in improving internal efficiencies, responsiveness, coordination and integration between various government departments and external agencies, citizens and businesses. The global trends also point out to the emergence of e-Government revolution after the Internet and e-commerce revolutions.

We often hear a number of words coined to describe this newly founded love between the Governments and the computers-"Good Governance", "SMART Government" and "e-Government". It is pertinent to state clearly what they mean. 'Good Governance' connotes the widest meaning of the three phrases. It encompasses the entire process of public administration, the processes underlying the formulation of public policies, the HRD efforts required for re-skilling the government machinery, prioritisation, efficient management of public resources and above all re-designing the various instruments used to realise the concept of a welfare state. 'SMART Government' is an acronym for Simple, Moral, Accountable, Responsive and Transparent Government. It is the image of an ideal government through the eyes of its constituents. E-Government is a subset of the concepts of Good Governance and SMART Government. It is the very specific task of using the tools offered by Information Technology in various aspects of the process of governance with the objective of achieving efficiency, transparency, accountability and user-friendliness in all the transactions that the citizens and businesses conduct with the Government – that is, providing digital interface in the G2C and G2B interactions. A number of arguments are adduced against the concept of e-Government.

Some of the popular arguments, especially in the Indian context, are: "It helps only the rich", "It can't be done in India", "Who needs e-Government when labour is so cheap in India?", "The laws are hurdle", "The existing infrastructure can't support e-Government efforts", "It won't be allowed to happen by the vested interests", " It is too expensive for India".

Real Cost of Government Services: The justification for e-Government stems from an analysis of the *real* cost of obtaining Government services. It is well borne out by experience that in addition to the prescribed statutory levy and the prescribed transaction cost, securing service from a government agency, more often than not, entails any or all of the following *indirect costs:*

- Delay and uncertainty
- Lack of transparency
- Corruption
- Mistrust/ill-treatment at the offices
- Loss of wages/productivity of the citizen/business
- Cost of travel & stay at the place of service

If the government could provide its services, such that the above indirect costs are avoided, then the citizen would be prepared to avail the same even at an additional charge. Tools of Information Technology certainly have the potential of meeting the challenge. The option, clearly, is e-Government. It has the portents of providing high quality government services to citizens and businesses, of providing equal access and equal treatment to the rich and the poor, of bringing in enhanced transparency, speed, reliability and consistency in handling transactions, of opening up immense scope for offering new services, for instance 'any-time, anywhere services' to the clientele, of making the concept of Citizens Charters a reality and, above all, of reducing the real cost of transacting with the Government.

Need to Embrace Emerging Technologies: While the reduction of real costs and enhancement of convenience are arguments for e-Government from the citizen's perspective, there is another set of reasons purely from the organisation's

position. Several sectors of the economy are embracing the emerging technologies so rapidly that the public agencies that do not choose to fall in line would soon become 'out of place' in the global scenario. In other words, the sheer pressure exerted by the technology-savvy entities in the private sector is enough to compel the public sector to clutch at the modern tools.

Implications of e-Government: Given that e-Government is a highly desirable objective, the immediate questions are – 'Is e-Government easy enough to implement in a reasonable time-frame?' 'What are the different dimensions and issues one has to be wary of in this context ?' Here are some answers:

- *Size, Cost and Complexity:* An estimate of the effort of computerising the processes in all the departments and agencies of the Central and State Governments in India, puts it at over 130,000 person-years, costing about Rs 35,000 crores. Besides these seemingly impossible figures, the sheer spread of the implementation is daunting and beset with problems relating to logistics of installation, training, maintenance and supervision. Given the existing low levels of computer competency there is a great risk of underutilisation and non-utilisation of IT assets in a widespread programme implemented by the Government. The variety of applications to be implemented is unnerving. We have simple MIS applications, data processing applications of medium complexity and extremely complicated applications like OLTP, GIS, SCADA and the like. Needless to say, we do not have, within any Government, the variety of skills required to develop and implement applications with such a wide spectrum of complexities.
- *Speed of Implementation:* Implementation of e-Government applications across hundreds of departments and thousands of offices, could take endless years in the normal circumstances. Given the rapid advancements in the convergence technologies, adopting a normal public sector approach to implementation of e-Government is fraught with the following risks:

- The technologies originally used in the design of a major project get outdated by the time the project is completed.
- Projects implemented at different periods are out of tune with each other.
- The benefit of end-to-end and integrated solutions, especially those involving inter-departmental approach, would be a mirage. This would necessarily mean that a '*carpet bombing*' approach would be required to be adopted if e-Government has to make any meaningful impact on the users.

- *Integration:* Given the objective of providing integrated services to the citizens on the lines of one-stop shop, it becomes imperative to adopt an overall architecture for e-Government that facilitates such a seamless integration of applications implemented by various departments and agencies of the Government.
- *HRD for EG:* One of the handicaps is the low computer literacy in most of the Government departments. Given the size of the employee population in public sector and also the fact that about 50% of them are in the age group of 35-45 it is somewhat difficult to impart a reasonable degree of IT skills, which is a prerequisite for successful implementation of E-Government.
- *Organisational buy-in:* Change Management by far is the most difficult task-more complex than the technology issues. The employees of each department have to be involved and associated with the efforts at each stage starting with system study, design and development of software so as to ensure a buy-in. Extensive training and conducting of workshops at state, regional and district levels are some of the other change management techniques.
- *Additional Cost of Services due to EG:* The additional investments to be made in government departments to provide electronic services to the clientele, would entail not only a capital cost but also recurring costs. The governments are hard pressed financially and cannot

perhaps provide for these costs through a budgetary support. This brings us to the inevitable conclusion that the brunt of the operational costs will have to fall on the citizens or the other end-users in the form of user charges.

Different ways of using IT in Governance: The word e-Government is too general. Specifically, it means using the tools of IT for enhancing the productivity, efficiency of government organisations and quality of the delivery of services, covering the following areas:

- Citizen Services
- Internal Efficiencies
- Enforcement of Law
- Judiciary
- Legislature
- Education
- Promotion

Overall Framework for e-Government: The complexities of realising the vision of a total e-government necessitates the creation of a suitable framework for effectively meeting the challenges posed by management of technology, resources and implementation. The framework developed by Andhra Pradesh for this purpose is relevant. The following diagram illustrates this. In view of the fundamental importance of the overall framework.

6C Model for Implementation: We have developed a **6C model** from the experience of implementing/coordinating a number of projects in the government departments. This model tries to incorporate the essential features of a structured approach to a successful implementation of IT projects. The 6C model comprises of the following:

1. *C for Content:* Technology Framework Resource Framework Implementation Framework ICT Architecture PPP Model 6C Model By 'content', we mean the application software that is capable of translating the end objectives of an IT project into visible results. Content is the heart of any IT project. The process of content development encompasses a whole range of activities starting with a

comprehensive study of the system, identification of the objectives and ending up with delivery of the intended benefits to the citizens or other users of the IT system.

2. *C for Competencies:* Implementation and maintenance of e-Government projects through IT professionals hired from the market is likely to result in failure of the project as the organisation is bound to disown such outsiders. Departments desirous of implementing major IT projects are required to simultaneously build up the required competencies at various levels. Typically, cadres are to be built at 3 levels – top, middle and cutting-edge levels. Chief Information Officers, at the top level, should be proficient not only in the domain knowledge of the department but also in the various IT skills.

   The role of the CIO, after the completion of the training process, is to oversee the implementation of major IT projects in the parent department. It is also absolutely essential to build a middle-level cadre of technical personnel at the district level in the departments intending to implement major IT projects-in parallel with the design and development of application software to ensure that the department is self-sufficient in most of the technical matters at the field level. Simultaneously with the design and development of the application software it is necessary to identify the required number of employees at the cutting edge level, who will have to operate the computers when the project is implemented. Project Management skills Implementation of major IT projects calls for immense skills in project management. It is necessary to build these skills at the apex level. This not only sharpens the vision substantially, but also enables overseeing the several activities in parallel and thereby reduces the total implementation period.

3. *C for Connectivity:* Widespread connectivity is a pre-requisite for provision of services on any-time, anywhere basis and to achieve significant productivity gains in government agencies. Besides the APSWAN project, which connects Hyderabad with all district head quarters, the

Government is promoting laying of optical fibre cables across the length and breadth of the state, by the private sector. It is expected that in 3 years, connectivity would not be a major issue.

4. *C for Cyberlaws:* The successful functioning of an IT project should not be contingent upon the whims and fancies of the personal likes and dislikes of those at the decision-making levels. All major IT projects should derive their legitimacy and strength from a suitably formulated cyber law. While the Information Technology Act 2000 provides the basic framework for giving legal support to IT projects implemented within the governments, we are also required to undertake a specific exercise in the departments implementing major IT projects, to identify the legal provisions which need to be specifically amended to take care of the requirements of the IT systems. Besides the above, it is necessary to attempt a detailed examination of all the rules, procedures and forms in use by the department so as to make them compatible with the reengineered procedures and processes of the IT system. The need for a separate set of laws to regulate and govern the cyber-economy stems from two factors. Firstly, the subject matter of concern here is intangible and exists in the unseen digital world, that defies the normal, time-tested methods of evidence and assurance. Secondly, the traditional methods of jurisprudence are too slow for the Internet world. The saying-Justice delayed is justice denied' is acutely true in the cyberworld! The IT Act essentially brings two fundamental changes. Firstly, it gives legal recognition to the records maintained electronically. Secondly, it gives legal recognition to the process of authentication of electronic records by affixing digital signatures. Though the IT Act 2000 excludes certain classes of documents from its applicability – like power-of-attorney, trust, will, contracts relating to immoveable property– it is still a major step forward. We have to evolve methods of operationalising the Act very quickly to derive the intended benefit. The IT Act brings with it a number of benefits like access control, authentication,

data privacy and confidentiality, integrity, nonrepudiation and an institutional mechanism for management and audit of electronic transactions. These features are immensely useful in several areas of e-commerce, e-banking, e-Government, telemedicine and the like.

5. *C for Citizen Interface:* However good the content, competencies, connectivity and cyberlaw may be, it is of no use unless the citizens have an affordable and ubiquitous access mechanism. There are several options like Citizen Service Centres, Internet Kiosks, Home PC's, Set-top-boxes etc. We should plan how the services of an e-Government project are to reach the intended beneficiaries, in a cost-effective manner while conceptualising the project itself.
6. *C for Capital:* The implementation of IT projects involves the mobilisation of capital investments as well as the funds required for maintenance of the systems on a sustained basis. With increasing pressures on the fiscal systems, governments are not in a position to extend an open-ended financial support to such projects. Against this background, it becomes increasingly necessary and almost imperative to find new and innovative methods of financing the IT projects.

A framework for Public Private Partnership for E-Government is described below:

- *Concept of PPP for e-Government:* A variety of solutions in the generic name of Public Private Partnerships are being employed today to bridge the gap between the expected levels of speed, efficiency and spread of public projects especially in the areas of creation of infrastructure and provision of services. The concept of Public Private Partnership (PPP) essentially arises out of considerations like, the imperative to provide infrastructure of high quality, shortage of public funds and above all, the profit motive driving high efficiencies and quality in the privately managed areas.

  The Public Private Partnership can assume a wide spectrum of shapes like, BOO, BOOT (Build-Own-

Operate-Transfer), BOT for specified periods-otherwise called concession contracts, Joint Ventures, private finance initiative (PFI), partial privatisation through partnering with strategic investor etc. The idea is to arrive at the right combination of public sector accountability with private sector efficiencies and to also to share the risk correspondingly. Experiences across the globe show that IT is one of the areas which is eminently suited for PPP– especially, in areas such as driving licenses, utility bill collections, management of land records etc.

Investments in information technology by governments have an opportunity cost since there are limited resources of money, time and attention. Investing these in IT would explicitly deny such investments in other development areas like provision of water, sanitation, health, shelter, production technology and skills development. Investments in information technology have therefore to be made very strategically by governments. The Government of Andhra Pradesh has focused its energies on creation of content and digitisation of databases so that transaction based services become attractive for private sector players. For example, in the case of the TWINS project after a successful demonstration of the pilot, private sector partners have been involved to provide services to citizens. In the case of infrastructure creation, government has leveraged assets like land for attracting private sector investments to set up facilities like Hitec City. Similarly, government has used the provision of a royalty free right of way for attracting investments into setting up high-speed optical fibre networks. The possible usage of such networks for e-government applications in the future has in turn enhanced their commercial viability.

- *User Charges:* The implementation of IT projects results in delivery of better quality services to the citizen. Citizens derive the extra convenience by making the services speedier, more transparent and easily accessible. For this extra convenience the citizen could be prepared to pay an additional cost over and above the normal statutory

fee or charge. The government of Andhra Pradesh has been contemplating the issue of suitable guidelines to the departments in the matter of fixing user charges for providing IT enabled services to the citizens.

The implementation of the concept of collection of users charges for providing IT enabled services opens up an immense possibility for taking up a large number of the citizen services projects, aimed at smoothening the government citizen interface. It is assessed that the user charges will be quite nominal when compared to the direct and indirect costs to be incurred by the citizen in availing the services from government departments and agencies. This model would result in creating IT systems that are in equilibrium by themselves without the government having to invest in the capital costs or in the recurring costs.

- *Benefits of PPP for EG:* Three sets of stakeholders benefit from the Public Private Partnership model applied to e-Government.

Benefits to Government

- Minimising financial outgo
- Better liquidity
- Protection against technology obsolescence
- Speedier implementation of e-Government projects
- Efficiencies in management
- Better image

Benefits to Citizen/Business

- Easy access to services
- Single window/one-stop shop
- 24x7 convenience
- Flexibility in the choice of access methods and devices
- Saving of indirect cost and hardship

Benefits to Private Sector Partners

- Reliable streams of revenue
- Low risk

- Creation of employment in the development, implementation and delivery
- Capturing business from related sectors (wider market initiatives)

Technology Framework for e-Government

- *IT Architecture:* Given the large number and variety of applications to be developed across government departments, it is essential to have the whole picture conceptualized and to lay down a common framework and ground rules for the guidance of the departments. Otherwise, there is the danger of creating islands in different departments that cannot communicate or be interoperable. The concept of providing integrated services would remain a mirage. A comprehensive exercise has been made in Andhra Pradesh to prepare an overall IT architecture for e-Government, with the assistance of Price Waterhouse Coopers (PWC). The exercise has yielded highly useful deliverables like application architecture, database architecture, a set of standards including metadata standards, coding and documentation standards, prioritisation of applications etc. It is intended to disseminate this knowledge among the key officials and ensure that it get internalised in all the IT projects implemented now and in future. The core recommendations are specified as mandatory compliance requirement for developers of all major IT projects. These recommendations, which should be useful to Governments, developers and IT planners across the globe, have been made available on the Internet at www.ap-it.com. With a sound IT architecture in front of us, there is no apprehension that a rapidfire development of applications would result in duplication, incompatibilities or other problems.
- *IPR Sharing:* implementation of EG projects under the PPP model raises several issues relating to IPR over the products, technologies and models developed during the course of the implementation. It is necessary to adopt a suitable IPR sharing mechanism, which would also bring

in the advantage of lowering the upfront costs to the Government or to the end user through the process of productisation. The products can be sold in other States and countries by the developer to recover part of the cost of development. A share of 20 to 30 % for the Government depending on the extent of involvement of Government in the development process would be a good incentive for the private sector to implement the projects.

- *Privacy Issues:* With rapid computerisation and provision of networked services, we run the risk of invading the privacy of individuals. It is necessary to look at the degree of assurance that need to be given to the citizens and businesses on the privacy of the data at the individual or aggregated level and transaction data. This is one area, which could seriously hamper the transaction volumes, if proper answers are not found to the apprehensions of the users.

IT for Poverty Reduction: Information technology can be used as an enabling tool to fight poverty and its ill-effects, though there are divergent and contrary views as to the use of IT to mitigate poverty. UNDP states, "Information and communications technology (ICT) has become an indispensable tool in the fight against world poverty. ICT provides developing nations with an unprecedented opportunity to meet vital development goals such as poverty reduction, basic health care, and education far more effectively than before. Those nations that succeed in harnessing the potential of ICT can look forward to greatly expanded economic growth, dramatically improved human welfare, and stronger forms of democratic government." Richard Heeks however opines that the use of information technologies require "a lot of overt resources including a telecommunications infrastructure to provide network access, an electrical infrastructure to make the ICTs work, a skills infrastructure to keep all the technology working money to buy or access the ICTs, usage skills to use the ICTs, and literacy skills to read the content".

However, the widening scope and opportunities in IT and IT enabled services could open up new channels of providing

employment and income which could expand the opportunities for the poor too. IT services have the potential to accelerate the growth rate of the economy. Use of IT in rural areas for enhancing agricultural production for example, could prove immensely beneficial as most of the poor live in the rural areas. Moreover, its use in educating the rural masses could not only give them a voice but also improve their prospects for employment thus providing for their upliftment and security.

Most significantly Information Technology can ensure the proper utilisation of funds for the poor by making the government more transparent and accountable, and by putting down corruption effectively. An accountable and transparent government can ensure the proper use of funds for infrastructure development, increases in revenue, and cutting down on wasteful expenditure. Use of IT could also remove red-tapism, and accelerate the decision-making process, thereby attracting investments into the state. The state government has initiated a number of projects under the concept of SMART government Significant among these are:

- The CARD (Computer-Aided Administration of Registration Department) project, which has cut down the time for sales registration from 10 days to less than an hour.
- TWINS, (Twin-cities Integrated Network Services) which offers services ranging from utility bill /tax payments to issue of certificates and servicing of information requirements of the public, by integrating 25 services on a one-stop basis.
- FAST (Fully Automated System for Transport) whereby 37 offices of the Regional Transport Officers are being connected, and services like issue of learner's licenses, driving licences and registration of vehicles have been computerised. A Secretariat Knowledge and Information Management System (SKIMS) has been entrusted to a private sector partner for designing and implementing a knowledge management and workflow automation system for use in the State Secretariat. The system will help to cut down on delays and introduce greater accountability

within the Secretariat. The project will be completed by February 2002. A Centre for Good Governance is being established under the aegis of the HRD Institute of Andhra Pradesh with assistance from the Department for International Development (DFID) UK.

The centre will focus on improving the quality of governance in the state through taking up training, consultancy and research programmes. Discussions are currently on with multilateral financial institutions to eventually expand the centre into a major institute focused among other things, on use of information technology for better governance. Tie-ups with leading international universities specialising in public administration are also being worked out to create a world-class institute specialising in the area of SMART government. Recently an executive training programme for senior civil servants was taken up in collaboration with the John F Kennedy School of Government at the Harvard University.

The induction of Information Technology in a third world context poses challenges in terms of management of change apart from technological challenges. As part of the change management exercise, governments will have to inject a sense of urgency into making strategic use of Information Technology for better governance. An overarching vision will have to guide the entire process so that people are inspired to use Information Technology for realising a better future. A guiding coalition will have to be put in place comprising of individuals who understand technology and are willing to champion its cause. Effective communications will have to be taken up in order to ensure that there is common understanding of goals and strategies for the pervasive use of Information Technology in society. The empowerment of people will have to be an important component in the process of using Information Technology for better governance. This empowerment will have to be achieved through re-engineering processes and procedures. Moreover, in order to sustain the momentum for change, quick wins will have to be accomplished. Unless people see for themselves the tangible benefits from technology it will not be possible to take the process forward. Further, modern ways of working will

have to be embodied in society at large and within government in particular so that Information Technology becomes a part of the cultural milieu.

Improving Efficiency and Service Delivery

Automating government processes can be challenging for developing countries, many of which suffer opaque, corrupt, and inefficient bureaucracies. In these cases, the struggle to develop electronic systems goes beyond information technology issues, encompassing the need for full assessments and re-engineering of government administration, record keeping, and knowledge management. As stated previously, this process determines the success or failure of e-government projects. Despite the difficulties, national and local governments in countries such as India, the Philippines, Chile and Brazil have implemented comprehensive automations of procurement, tax administration, and other systems. Reforms such as these encourage accountability, transparency, and trust in the government's ability to deliver services to citizens.

The government of Karnataka, India has instituted the widely-lauded Bhoomi land registry system. Using biometric identification technology, document scanning, and dispersed information kiosks, the system has automated 20 million land records since its inception in 1998. Additionally, the state of Bihar has implemented the Sales Tax Administration Management Information Network Aided (STAMINA), improving sales tax revenue collection and helping prevent tax evasion. Implemented in stages, it has catalyzed steadily increasing tax revenue for the state since 2001.

In the Philippines, a comprehensive, Internet-based, electronic procurement system has been implemented which allows for online services such as supplier and government agency registration, price confirmations and supply cataloguing, and contract bidding. Also available on the government web portal is the Bureau of Customs e-Trade website, which provides a 24-hour electronic logistics network for the country's cargo industry. Another project by the National Police makes use of the Philippines' social phenomenon of text massaging. The

initiative encourages direct, nationwide, public communication with the department. It is designed to allow for emergency assistance, complaint registration, and to identify corruption by the police or other public agencies.

In Chile, the Chile Compra web site provides public agencies a single online location to access information on goods and services. The site includes a notice board of current government needs, online registration for private companies wishing to do business with the government, and updates on procurement guidelines and regulations. In addition, there is an online discussion forum that allows providers and government agencies to learn more about best practices, available contracts, and other procurement- related news and information.

Brazil also has a successful government electronic procurement site, Comprasnet. Additionally, local governments in Brazil are increasingly automating back-end systems and providing improved electronic services to their citizens. Examples include the state of Sao Paulo's web site, which allows for electronic state tax payments and the city of Rio de Janeiro's site, which allows for electronic property tax payments.

Citizen Participation & e-Voting: While other examples indicate a move towards interactive online features in e-governance projects, as indicated in the UN report, few governments around the world are providing real possibilities for citizens to influence government policy changes. In most cases, this has been left to efforts by civil society, with some outreach by government departments. Still, truly participatory, electronic efforts in developing countries have generally not moved beyond online feedback forms or e-mail contact capabilities.

However, developing countries have ventured where most developed governments have feared to tread – into the realm of electronic voting. The governments of Brazil and India have implemented electronic voting systems while others like Argentina, Costa Rica and the Dominican Republic are considering similar initiatives.

E-governance Standards Committee Mooted: A 'United Nations for E-Governance' is on the anvil. With the first draft

ready for publication by March 2003, the World E-Governance Standards Committee will focus on providing "a collective pool of reports where knowledge can be shared along with development of new technologies that would be required to address e-governance issues and implementation".

The U.S. based Sandhill Systems (SS) has already initiated discussions to rope-in leading Indian State governments in the global e-governance standards body. Currently SS is spearheading the formation of the World E-Governance Standards Committee in partnership with Intel and Microsoft. The responsibility would be handed over to the worldwide web consortium once the momentum of the e-governance programme accelerates.

"India needs to consolidate its priorities and communication to the public with greater collaboration between the State and the Union administrative bureaucratic machinery. Along with India, we are seeking the support of the U.S. Government in this project."

While India spends nearly 2-3 per cent of its budget on e-governance, the U.S. has allocated $52 billion in 2003 for various e-governance initiatives including government-to-citizen and government-to-corporate programmes.

Challenges: In the Indian context, some of the key issues include establishing a trust level with the public, bureaucratic challenge, providing a common citizen identification system akin to the U.S. social security system, and a comprehensive taxation system.

"These challenges are not specific to India alone, even the U.S. faces them. The U.S. Government has mapped an action plan for e-Government to tackle some of these issues. For instance, e-authentication initiative aims at building mutual trust to support widespread use of the Internet between the Government and the public," Mr. Srinivasan said.

On the global front, the Standards Committee will have to face operational problems like multiple languages and multiple currencies. Moreover, a common form would provide a convenience factor both to the Government(s) and citizens while

reducing paperwork. The Submission Server (patent pending on technology) developed by SS allows the bureaucracy to offer a common form module. This can be customised to provide programme specific set of documents. The Server accepts data from multiple devices including faxes, paper and e-mails.

In the case of public scepticism on protection of privacy provided by the electronic submission of forms, a new e-Authentication initiative has been identified. This would break down the 'trust' barrier. Already implemented by the (U.S.) Federal Government, the application would address authentication security, privacy and electronic signatures requirements of the e-governance programme. The solutions are built on top of the citizen's security number using 'trusted-broker technology'. Meaning personal information cannot be accessed by un-authorised personnel as the server would not store this information.

Implications: Benchmarking of service levels provided by the governments and systems integrators in administration and implementation of various e-governance projects will heighten the benefits of 'IT for the masses'.

Public inconvenience in dealing with bureaucratic red-tapism has been curtailed due to online submission of forms. However form applications authored by document vendors like Microsoft and Adobe are not inter-operable as of now. The World E-Governance Standards Committee with the support of these vendors would aim to provide 'interpretability'. Sandhill Systems is also working with Microsoft and Intel around the Submission Server architecture for online form processing and the next step: device independent submis.

As will be shown, much of the literature in the academic world reflects the important dichotomies between how developed countries approach e-government and the obstacles facing developing countries. In summary, the challenge that developing Commonwealth countries face is that many of them still do not have either the advanced industries or the financial wherewithal to duplicate in all respects what their fellow members have achieved in the more developed countries. At the same time, however, public expectations are building to the same extent

as they have elsewhere regarding the desire to modernise governments and their service delivery. Such a discrepancy, which sets the growing desire for change against the financial constraints on implementation, faces the Commonwealth system with a unique dilemma.

Fortunately, the tradition of cooperative endeavour is enabling the Commonwealth to successfully tackle this situation. By way of three approaches, e-government is reaching all corners of the Commonwealth, in that developing countries are:

1. Identifying their ICT needs for e-government;
2. Avoiding the pitfalls by tracking the lessons learned in other countries; and
3. Focusing infrastructure acquisition and deployment on their particular service needs.

The way that developing Commonwealth countries are identifying their ICT needs for e-government is through Benchmarking. A benchmark is a structural comparison or performance test of hardware and/or software. A number of international organisations have conducted benchmarking studies of both developed and developing countries efforts to apply ICTs to workflow, horizontal integration, service delivery, and public consultation. By observing what others have accomplished it is possible to pick and choose what is best in the particular circumstances of each government.

The most effective technique for avoiding the pitfalls of previous projects is by tracking the lessons learned in other countries through seeking and applying best practices. The term refers to "effective ways to perform processes or sub-processes that have been identified inside or outside" the organisation. Lists of best practices have been published for the benefit of new projects in business and government.

Infrastructure acquisition and deployment between different organisations or projects is called Technology Transfer. For some aspects of e-government, turnkey packages are available that will provide total systems for specialised functionality. In other cases consultants can analyse and design a customised solution that includes such transfer elements as new equipment, software upgrades, and ongoing user training.

The procedure of benchmarking is now considered one of the standard methods in a manager's "tool kit". In her description, Dr. Suzanne Turner, University of Warwick, advises use of the technique whenever "you are interested in learning from other organisations ways to improve your own organisation". There are a number of different ways to use the procedure, including either in-house observation or external comparison, and either staff conducted or professionally contracted. In the case of benchmarking between countries, external comparisons and professional contracts would be the means usually used.

The European Commission, of which the United Kingdom is a member, sponsored a conference in Manchester, UK, last year to compare governments' readiness for e-government projects. Concurrently, research from a New Zealand academic focused on the impact that national cultures were having on the worldwide readiness for e-government. The School of Computing at Middlesex University is now offering PhDs to international students that consist, in part, of a study of e-government readiness in their respective countries. One notable example compares Egypt, the United Kingdom, and Dubai. The Victoria University of Wellington, New Zealand has recently appointed the first Professor of E-government in the world.

Governments themselves sponsor some of the benchmarking studies. The e-Government Resource Centre is a dynamic site hosted by the Government of Victoria, Australia, and aims to help everyone learn from each other and continue to be the pacesetters in using new technologies to deliver better government services. International financial institutions are also advocates of electronic government, with the view to increasing transparency and reducing corruption. The World Bank has a website devoted to teaching about, and assisting with e-government. One particular paper on this website covers sectors, stages, opportunities, and challenges of online government.

What this sampling indicates is that there is an abundance of materials available that benchmark (compare) the efforts of

numerous national and regional governments to install and operate e-government. All of this material is available to Commonwealth countries, as are the invitations of many of the sources of material to seek further information and/or help in studying and analysing their own situations, and designing and deploying their own solutions.

Any government of a developing Commonwealth country that is seeking helpful comparisons of these kinds of projects may find the following guidelines useful:

- create a team of stakeholders to design a benchmarking survey,
- ask the stakeholders' team to craft a list of functionality requirements,
- look for comparisons of hardware, software, and people ware,
- seek comparisons of both similar and dissimilar situations to your own,
- search for comparisons of costs, duration, and disruption of e-government projects,
- find out how much was devoted to training (half the project cost is appropriate),
- inquire about sources of financing that different projects have used,
- ask technology suppliers to compare projects they have implemented.

Best Pactices and trading best practices is one of their major endeavours, which they define as an assessment recommending the most appropriate way of handling a certain type of task, based on an observation of the way that several organisations handle that task.

Business consulting has the most experience with best practices to date because commercial firms were the first to get into digital transactions and networked organisations. Best practices have now accumulated to the extent that large consulting companies often assign specialised groups exclusively to leveraging best practices knowledge. Businesses that use such best practices, and the consultants who can advise on

them, are already practicing in Commonwealth countries, both developed and developing. Developing countries can use private sector expertise to move forward with e-government by partnering arrangements that could share experience and lower costs.

The European Commission maintains a website devoted to e-government best practices of its members. There is a Good Practice Framework on this website, the main objectives of which can be useful to all Commonwealth countries:

- To collect examples of well-defined e-government cases.
- To create an intelligent knowledge database of those involved in e-government.
- To provide easy access to e-government know-how and expertise.
- To support the sustainable transfer of good practices.

Academic organisations have also taken a deep interest in e-government for developing countries. The "e-Government for Development Information Exchange" Project is coordinated by the University of Manchester's Institute for Development Policy and Management. This website covers five e-government topics, namely:

- Building e-Government Websites;
- m-Government–Mobile/Wireless Applications in Government;
- Public Sector Health Information Systems;
- Using ITCs for Government Transparency; and
- Achieving Success/Avoiding Failure of e-Government Projects.

The last topic of this list will be one of the most useful for underdeveloped Commonwealth country governments seeking to digitise. Questions about actual or possible project failures are posed and then answered in such a way as to alert those contemplating further e-government so they can recognise many pitfalls.

Building Effective e-government Facilities Follows a Supply-chain Process: research, analysis, design, planning,

deployment, training, operations, feedback and improvement. Although any of these steps might conceivably be either expanded into sub-routines, or contracted into larger steps, these activities are both recognisable and manageable. Furthermore, depending on the resources available, not all of these steps need occur in a single linear process – some may run in parallel, depending upon the size, scope, and strategy of the project. However, all these steps have to be properly engaged if the project is to succeed. In this respect, e-government projects resemble many other public policy initiatives, which will come as no surprise to Commonwealth governments.

Governments in Commonwealth countries, and in most other countries for that matter, all want the acquisition and operation of e-government systems to be accompanied by technology transfer. They want not only to be the owners of the infrastructure, but also to be the masters of its design, operation, and future development. The exercise of both national sovereignty and political stability depend upon these capabilities. There are different visions about how to accomplish these goals though, which will lead to different versions of technology transfer.

One approach to e-government seeks to focus primarily on digitising service delivery to the public. Documents could be delivered to the public electronically, saving money and speeding dissemination. Developed Commonwealth countries began with this approach, and are now moving beyond it. With this approach there has also been some talk of government operations with fewer employees per service process, a prospect that has more recently been downplayed in favour of "improved service delivery".

Of course, there is a caveat to this suggestion. In most developing countries there is a lack of electricity and water and other life essentials. Poverty and literacy need to be addressed first, with technologies being enhancers of the process of change. Assessments of needs are the first step in helping a developing country to make effective use of ICTs.

A second approach revolves around improving the policy-making process through electronic workflow and

horizontal coordination. Silos of information and stovepipes of policy-making are slowly being reproached and replaced as the public demands.

The rationale offered for this approach is that more coordination will reveal existing contradictions in statutes and regulations, and avoid them in new ones. The outcome will be policy integration, on the assumption that the public wants understandable programs rather than jurisdictional roadblocks. Developed Commonwealth countries are now in the midst of implementing this approach, encountering more inconsistencies and resistance than was initially expected.

A third approach, just recently started, is to increase public consultation and participation in policy-making. One aspect of this approach is to invite the public into the policy process via electronic networks that deal with specific issues and operate under controlled formats.

The other aspect of this approach is to take network accessibility to the public, often in the form of community informatics, to act as a combination of economic-social-political infrastructure, so that poverty does not continue to perpetuate the digital divide. Commonwealth governments are contemplating these possibilities, with some moves in this direction – but power sharing is a stretch for government officials and the public wants clarification of the rules of engagement before it will trust the process.

Public consultation and participation in policy-making is sometimes referred to as electronic or digital governance. The premise behind the use of this term is that the outcome (the process of governance) is becoming more important in the public mind rather than the means of accomplishment (i.e. governments). Be that as it may, the instruments for delivering public services are still organised governments, so even.

e-government is just another project in the public forum. Whichever phase of e-government a country is in, the key variable in successful technology transfer is operator training. No country is immune to this requirement, regardless of its type of government or form of political culture. But because of their democratic ethos, Commonwealth countries are better

positioned to achieve an alignment between technology systems and political needs through the mobilisation of operator "buy-in". That is why technology transfer must be factored into the process of building e-government right from the beginning of project planning. There is no single "right way" to design or implement e-government – it all depends on what the country needs and the trajectory of its political aspirations.

Reflecting this diversity of possibilities, academic analysts are taking a broad view of e-governance alternatives. The DigitalGovernance.org Initiative is a project of the London School of Economics in the UK. It is aimed at studying, designing and propagating e-Governance Models. These models of e-government are generic, and include the following:

- a broadcasting model (disseminating information to the public)
- a critical flow model (informing the public of important issues)
- a comparative analysis model (benchmarking government performance)
- an e-advocacy model (mobilising the public, lobbying for action)
- an interactive-service model (facilitating public participation)

As can be seen, these models summarise both the history and the alternatives of e-government. And depending on which choice, or combination of choices a Commonwealth government makes regarding e-government, the design of the system and the kind of technology transfer needed to support it will differ.

A United Nations-sponsored panel meeting in Geneva examining internet-related issues has successfully wrapped up its third session with a call for adequate measures to protect existing web governance arrangements, as well as fighting issues of key public concern, such as spam, network security and cyber-crime. The Working Group on Internet Governance (WGIG), looked at possible recommendations for future action in the area of internet governance, and discussed, among other thing, issues related to the administration of internet names

and addresses and the root server system. Participants agreed that spam – unsolicited or 'junk' e-mail – while not yet officially on the international agenda, must be discussed as a matter of priority.

The focus was on how to deal with it and protect the internet, as well as on the need for a multifaceted approach, involving all interested parties. Proposals put forward ranged from drafting model legislation to more informal models of collaboration. Continuing its preparations for the second phase of the World Summit on the Information Society (WSIS) later this year in Tunis, Tunisia, the 40-member Working Group also addressed two other public policy areas – issues relevant to the internet but which have a much wider impact, and issues related to internet governance and development. Working Group chairperson Nitin Desai opened the consultations by pointing out that their main aim was to assess strengths, weaknesses and opportunities. Based on this assessment, there would be a need to look at the changes that may be required.

The Working Group should therefore clarify areas that governments were expected to decide at the Tunis Summit, and discuss the roles of the various actors involved in governance arrangements. Yoshio Utsumi, secretary-general of the International Telecommunication Union (ITU), in his capacity as WSIS secretary-general, reiterated the main tasks that the Working Group needed to address – to find a working definition of internet governance, to identify public policy issues and to define roles and responsibilities of all actors. Some participants at the open consultations wanted Internet governance arrangements to be rooted in the United Nations framework, which in their view would give legitimacy to the system. Others stressed the importance of private sector leadership, which they saw as more suited to deal with the issue due to the nature of the internet.

World Bank gives in-principle nod for $500 m Support to e-Governance Plan

IN a move that is expected to give a fillip to the country's e-governance initiatives, the World Bank has given an

in-principle nod for $500 million financial support to the national e-governance plan (NEGP).

"The Government had initiated a dialogue with the World Bank for support of the e-governance plan. In January, the bank's management gave an in-principle go ahead for $500 million financing in the first phase, with a clear understanding that if there is a need and absorptive capacity, it would be willing to upscale the support".

It is anticipated that in the next 9-12 months the bank's board would approve the amount and other modalities. The in-principle nod for $500 million is for a four-year period initially and would be extended in form of loan and credit, he added.

NEGP spearheaded by the Centre, is aimed at improving the quality, accessibility and effectiveness of Government services to citizens and businesses with the help of information and communication technology (ICT). It proposes to achieve these targets by rapid deployment and scale-up of select mission mode projects (projects with significant citizen interface); creation of national IT backbone for fast and reliable connectivity, data storage and access; integrated service centres for delivery of citizen services; and creation of Web portals for access to Government information and services.

NEGP in its current form consists of 10 functional components and 25 mission mode projects to be executed over a four-year period. An apex committee under the Cabinet Secretary is already in place for providing strategic direction. The mission mode includes projects that are to be implemented by ministries and departments at the national level, State departments as well as integrated projects that may span multiple ministries, departments and agencies.

According to a senior official in the Department of IT, based on the feedback from the workshop, guidelines for capacity building would be issued by the Government shortly.

Framework for e-Government: The complexities of realizing the vision of e-government necessitates the creation of a suitable framework for effectively meeting the challenges posed by management of technology, resources and implementation.

E-governance–Democracy, Technology and the Public Realm

We are all democrats now. Astonishing though it may seem, an idea that had virtually disappeared from the political lexicon by the early Roman period has now come to dominate the political experience of humankind. In essence a simple idea, although in the forms in which it is practically relevant to us it is anything but simple, democracy's power in the modern world lies in the familiarity of democratic institutions and in their peculiar aptness to the world in which we live, especially the economic aspects of that world.

After the end of the cold war and at the turn of not only the century but also the millennium, democracy, in some form and in a variety of institutional guises, has become the main locus of political legitimacy and practicality across the world. This does not deny that democratic norms are still often only given lip service by their supposed advocates. Nor does it suppose that this situation is either inevitable or irreversible. Many challenges still remain for democracy. Some, like its relationship with liberalism, are long-standing. Others, such as the impact and implications of globalisation, however that term is understood, are much more recent.

This report examines one particular aspect of the more recent challenges for democracy-the impact of contemporary technological innovation, especially information and communications technology. Over the last few years the literature on 'electronic democracy', 'e-democracy', and 'teledemocracy' has grown enormously. This report assesses this body of work and asks whether, on the balance of evidence, new technologies will be a positive force and how, in any event, they might be deployed to the best effect. It goes on to examine what these developments might mean for wider questions concerning the public realm and civil society and concludes with some suggestions for policy makers in the specific context of the emergence of new spheres of governance in the UK and Europe.

Throughout its modern history democracy has always consisted of three central practices arranged in slightly different

ways in different contexts. These three practices are deliberation, participation and representation.

Representation is a comparatively recent addition, a practice largely absent from ancient discussions of democracy. It has been the main bridge between modern conceptions of democracy and liberal politics which traditionally distrusted democracy as promoting the 'tyranny of the majority'. It has thus come to be seen as the crucial underpinning of liberal democracy. Participation, by contrast, has been a central plank in democracy from classical Athens onwards. However, different forms of democratic theory see participation differently. For some participation is limited to relatively restricted actions (voting, joining political parties). For others it is much more all embracing, involving people in the actual making of decisions and policy. Deliberation is also a central strand in democracy, but again different forms differ both as to what deliberation consists in and who should chiefly do the deliberating.

This report argues that today deliberation must be the central concern for democrats, for the simple reason that it is deliberation which is currently most at risk from the tendencies within democracy which we will explore later in this report.

These three elements are reflected in the following graphic representation of the principal forms of democracy adapted from James Fishkin's influential book Democracy and Deliberation (Fishkin, 1991).

The horizontal axis on the chart expresses the difference between 'direct' democracy in which a mass public participates directly in policy making and decision taking, and a 'representative' system in which certain selected officials/ politicians act on their behalf: participation vs representation. The vertical axis is presented by Fishkin as the contrast between 'Madisonian' democracy and a pure 'majoritarian' system. 'Madisonian' democracy is characterised by checks and balances, clear constraints on any majority necessarily getting their own way. The 'majoritarian' system, by contrast, lacks any such checks: the will of the majority carries all before it.

Finally, the dotted line represents the degree to which any decision making arena will involve considered weighing of

information and options, in other words whether it is 'deliberative'-able to engage in considered reflection-or 'non-deliberative'-where it is not (for whatever reason).

Fishkin then goes on to argue that in a modern political system there are three central conditions that need to be satisfied for a fully working democracy:

- The first is, again, deliberation-the opportunity for considered reflection over time (though clearly limited by the need to make a decision) rather than reliance on the 'opinions of a moment' like a snapshot opinion poll. Fishkin also argues that ideally such deliberation should build in the possibility of ever greater reflection as an important conceptual check on whether or not the political system is properly attentive to all relevant points of view and to questions about whose points of view are in fact relevant;
- political equality is the second condition-which he defines as 'the institutionalisation of a system which grants equal consideration to everyone's preferences and which grants everyone approximately equal opportunities to formulate preferences on the issues under consideration';
- non-tyranny is the third condition-which avoids the condition of tyranny characterised by 'the choice of a policy that imposes severe deprivations when an alternative policy could have been chosen that would have imposed no severe deprivations on anyone'.

We will use these three conditions of a healthy democratic system in the pages which follow to assess the effects of a variety of technological innovations on the system as a whole, including on the balance between participation, representation and deliberation in the system. We will see that to satisfy Fishkin's conditions we require a system which is deliberative and qualifies as both (basically) political equal and clearly non-tyrannical. It would obviously be possible to configure political institutions in a number of ways so as to achieve this. However, as we shall see, the impact of new technologies at present is pushing democracy increasingly towards the bottom left quadrant of Fishkin's chart, with a tendency towards a more majoritarian, direct and non-deliberative culture. That has

problematic implications for the structure of representative institutions, which are becoming decreasingly effective as a result.

Standard Liberal Democracy and Expansive Democracy

At this point, it may be useful to say something about a central distinction implied in Fishkin's table, but not explicitly stated. While there are many different varieties of democratic theory, it is commonly held that at present at least there are two broad groups that dominate the field. Mark Warren has described them as follows: 'One group seeks to balance democratic participation against other desirable rights of political order … by limiting the spheres of society that are organised democratically. The other group … sees such limits to democracy as an important cause for many of the ills of contemporary liberal democracies'.

Both groups take as a basic premise a particular understanding of the self and its relation to politics. The first group work with theories about the self which see it as being in fundamental ways pre-political, operating largely outside politics. They therefore see democracy primarily as a procedure to cope with the inevitable clash of individuals' pre-existing, pre-political interests. Warren describes this understanding of democracy as 'standard liberal democracy' (SLD). In common parlance it is what is referred to as 'representative democracy' and, in some form or another, has been the main institutional form that democracy has taken in the 20th century.

The second group, by contrast, argue that the self, the individual, and the issues addressed are changed through engagement in the political process, the process of decision making. This leads to an 'expansive democracy' (ED) in which 'increased democracy transforms individualistic and conflicting interests into common and non-conflicting ones [and these] transformations reduce conflict [and] allow reduced use of power as a medium of political interaction'. Further, this expansive democracy 'is necessary to the values of self-development, autonomy and self-governance'. It is this transformative character both of the issues and of the individuals involved which Warren sees as the distinctive element in expansive

democracy over its standard liberal counterpart. Traditionally, this distinction can be mapped onto Fishkin's table as follows:

In other words, SLD-the usual form of representative government-is dominated by Madisonian and representative institutions (though it has some majoritarian and direct aspects). ED, on the other hand, not really institutionalised anywhere, is held to be that form of democracy which would emphasise much fuller participation (hence direct democracy) and is thus more inclined towards majoritarian systems (the classic exemplar of this view would usually be Rousseau).

SLD has dominated both the theory and practice of democracy in the 20th century for reasons well put by the US political scientist Samuel Huntington in a recent study of what he calls the 'third wave' of democratisation-the transitions to democracy in Eastern Europe and elsewhere from 1974 to 1990 and beyond.

"When democracy is defined in terms of either source of authority or purposes. A procedural definition is used in this study since the central procedure of democracy is the selection of leaders through competitive elections by the people they govern, following in the Schumpeterian tradition, this study defines a 20th-century political system as democratic to the extent that its most powerful collective decision-makers are selected through fair, honest and periodic elections in which candidates freely compete for votes and in which virtually all the adult population is eligible to vote".

The key point is that SLD is precisely the dominant form of contemporary democracy because it is the form that allows the compound 'liberal democracy' to be realised. Historically, liberals were usually extremely hostile to, and at best very ambiguous about, democracy. in the 19th century liberals like Tocqueville or Mill were especially worried by what they saw as democracy's innate tendency to demagoguery and tyranny. This was especially because they were worried by democracy's supposed 'inherent' 'majoritarianism' which would overcome individual liberty. The gradual evolution of representative institutions-and the withering of more traditional 'classical' democratic procedures such as selection by lot-allowed the

gradual but always tension-filled rapprochement of liberal politics and democratic procedures. The result, however, was a 'democracy' where Madisonian checks on power and representative institutions together combined (ideally) to limit both the power of the state (the traditional liberal aim) and the potential power of the masses (the liberal fear of majoritarianism) in a way that allows participation but filters it and creates space-in representative institutions-for deliberation by those able to do it best. The clearest example of this type of liberal democracy is that established by the founders of the US republic, which is the truth in the oft repeated dictum that it is America's fate not to have an ideology, but to be one.

The above shows the extent to which contemporary democratic theory and practice are contested in terms of how best to put together representation, participation and deliberation. The challenge for practical democrats is to understand the various contemporary democratic systems in terms of the above analysis and then determine what we might do to ensure Fishkin's three conditions are effectively realised, sustained and enhanced. In its entirety that is a task well beyond the scope of this report. However, the following chapters consider in detail the implications for Fishkin's criteria of the increasing use of new technologies in the democratic system. As we shall see, the SLD and ED models of democracy are becoming increasingly blurred in the process.

The impact of 'technology' on democracy is by no means a new phenomenon, although it has been gathering pace over the last 30 years or so. During that time we have seen many studies and a torrent of comment on the ever growing role and effect of television in and on democratic politics. More recently a growing sense of the possibilities of new technology has also generated considerable debate amongst democratic theorists, advocates of the new technologies and others.

It is clearly the case, for example, that the technology now exists to develop much more 'participatory', 'direct' democratic forms, shifting the balance of the system away from representation. The literature discussing this development is

now correspondingly large and the ideas have now entered mainstream electoral politics. Part of Ross Perot's appeal in the 1992 US presidential election was his advocacy of 'electronic town halls', part and parcel of his attempt to sell himself as the people's, rather than the party's, politician. It is not the aim of this report to offer an exhaustive account of all possibilities of the new technologies. Instead the following pages will examine what we take to be the most important, and the most likely.

The Media: First let us consider the role of the media. It is clear that politics as such, and democratic politics in particular, is increasingly intertwined with the media, especially the audiovisual/broadcast media. The growing significance of broadcast versus print media can be gauged by some figures from the Roper organisation surveys for the television information service. In the US, for example, in answer to the question 'where do you get most of your news about what's going on in the world today?' (with multiple responses allowed) in 1972, the responses were TV 64%, newspapers 50%, radio 21%, magazines 6% and other people 4%. In 1992, the equivalent figures were TV 69%, newspapers 43%, radio 16%, magazines 4% and people 6%. Perhaps even more significantly the previous year (the year of the Gulf war, the most televised war in history), the responses were TV 81%, newspapers 35%, radio 15%, magazines 4% and people 6%.

The growing significance of the media as the place where people get their information about politics and issues is complicating and diffusing traditional patterns and relationships. In societies where 'access to state institutions depends upon the ability to mobilise votes from citizens', increasing fragmentation of the most efficacious way of doing that-through the media-inevitably fragments the society in question. 'Fragmentation' in this context does not mean disintegration. Rather it implies a diffusion of the manner in which influence is exercised: it is no longer possible to point to a single source of authoritative information about what matters. Even the TV 'news' comes in many different guises depending on the channel, the supplier and the location.

The overall effect can be seen as the increasing role of what we might call 'sound-bite politics' or, as Castells has called it, 'informational politics'. 'Informational politics' in this context, is produced by the recognition that in order to affect the political process actors (whether individuals or groups and whether extremely powerful or very weak) must 'process their projects and strategies through a similar technological medium' to that which imparts the information about issues and politics. This 'induces new rules of the game. The key point is that electronic media... have become the privileged space of politics'. Thus, Castells goes on to argue that 'In a world increasingly saturated by information … the most effective messages are the most simple, and the most ambivalent, so that they leave room for people's own projections'.

Much of the time this trend towards informational politics is seen as inimical to democracy. Major media corporations such as Rupert Murdoch's *News International* or Berlusconi's *Mediaset* group are often thought to control or manipulate politics in ways that would certainly violate the second of Fishkin's three conditions (effective political equality) and might, at least potentially, violate the third (non-tyranny) as well. However, the reality appears to be more complex. It is not that the media 'controls' politics as such, rather that they have come to create and constitute the space in which politics now chiefly happens for most people in so called 'advanced' societies-usually liberal democracies. Whether we like it or not, in order to engage in the political debate we must now do so through the media.

The record of most liberal democracies over the last ten or so years certainly seems to suggest that the development of 'informational politics' and the central importance of the media is having important effects on the structures of democratic politics. Specifically, it is accentuating a trend already visible in pushing an SLD system of representative democracy towards a model with more affinity with ED. The growth in voters' dissatisfaction with their political systems, their major parties and their political leaders is perhaps one indication that traditional structures of representation are fraying and that

the balance in contemporary democracies is shifting towards the majoritarian.

The growing and increasingly regular use of referendums and plebiscites is another indication of the trend. In the UK, for example, we have already seen four referendums since the last election (in Scotland, Wales, Northern Ireland and London), with more promised in the future. This is clearly a democratic practice, but also one which runs the risk of changing many of the current balances in democratic constitutions and transforming the nature of the democratic system.

Part of the same phenomenon, Castells thinks, can be seen in a growing 'politics of scandal' in which information relevant to individuals rather than issues becomes the dominant topic of debate. It is this interpenetration, the link between the media and divisive political gossip, rather than that between the media and politics in general that is most significant. It is not that there is *more* political scandal or corruption now than there has been previously (such judgements must be deeply contextual). Rather, the growing diffusion of the media-framed space where politics happens, and its growing volatility, coupled with the increasing interpenetration of commerce, media and politics and a decline in ideological alignment, have led to 'scandal and corruption' issues becoming what Castells calls the 'weapon of choice' in a political competition now fought largely on the territory of 'informational', sound-bite politics. The recent experience of the US in the Clinton impeachment is simply the starkest example of this. But the growing focus in British politics on personalities (Cook vs Brown vs Mandelson) and 'sleaze' (Neil Hamilton, Matrix Churchill, Mandelson and Robinson etc.) is another.

The cumulative effects of *these* aspects of new media technologies thus seems to be pulling democracy away from traditional models of SLD and towards a more majoritarian (though not noticeably more participatory) system. It is also having negative effects on deliberation since the possible sites for deliberation are far more diffuse and the *focus* of deliberation-how such deliberation relates to political decision and action, whoever does the deliberating-is thus made more problematic.

Other Technologies

In spite of the evidence of practice to date, might there be ways in which the impact of new technologies can have a positive impact on the practice of democracy? The remainder of this chapter highlights four main ways in which 'informational technologies' are seen as having the potential to develop and deepen democratic politics in the future:

- The first emphasises the internet, both as a two-way means of communication between governments and citizens free from the media-space of 'sound-bite politics' and as a new means of bypassing traditional political arrangements and reconnecting citizens with the political process;
- The second emphasises the impact of a range of new communications technologies on the relative power of citizens and lobbyists viz a viz each other and governments;
- The third considers a range of ways in which new technologies can improve participation through increasing 'direct democracy';
- The fourth, and most radical, suggests that the new technologies, not merely IT but also bio-technologies and other even newer forms, might change completely the way we look at democracy.

The Internet: What is the potential of the internet for invigorating democratic politics? It is obviously the case that governments are using the net vastly to increase the amount of information available to citizens. By 1995 the US government had already put more than 100,000 documents on the internet. While much if not all of this would probably have been published in hard copy as well, it is far easier for interested citizens to find and access this information online, whether from their own government or from other countries. These new means of government/citizen and citizen/citizen communication are clearly on the increase. As *The Economist* has pointed out, some politicians get far more messages in the modern e-mail era than their predecessors.

However, the mere fact of electronic submission does not ensure that messages will be read or responded to any differently than had they been delivered by snail mail. The White House responds to the 20,000 or so messages per day via snail mail and the mere fact that governments put information out guarantees neither its veracity nor that it is not part of attempts to 'spin' the world of informational politics.

Another possibility, much touted by politicians as well as by some citizens' groups, is that the internet offers a way of communicating outside the space of 'informational politics', either between governments and citizens or between citizens in new ways. The recent creation of the Highlands and Islands Alliance to contest the Scottish elections in May 1999 is an interesting example of the latter: a party created and sustained largely through e-mail and the net.

Even so, new 'e-parties' like the HIA will still have to work in traditional representative situations. While the techniques for creating and sustaining such networks may be dependent on new technology the job they seek to do still looks remarkably familiar.

A further complicating factor is the obvious fact that a 'blizzard of information'-both on the net and through multimedia technology more generally-may make democracy more difficult rather than less by overloading citizen capacities for knowledge and action and, at least in certain areas, making societies more fragmented through the creation of new divisions. At the least it makes the prospect of identifying a genuinely societal 'common good' less and less plausible. Where there are several hundred TV channels and individuals (consumers) exercise 'choice' over what they watch (or pay to watch), the possibility of the creation of a genuinely unifying-albeit virtual-'public space' has never been more difficult.

What however, of the hope that as the use of new communications technologies increases, aspects of what many see as the 'natural' democracy of the net-lack of hierarchy, absence of traditional barriers like class, gender, race-will rub off on political processes more generally? Most of the available evidence on this is at best mixed. Whilst some studies have

shown that people tend to speak more freely and more equally on the net and that some social barriers do appear less important, others suggest that this may wane as internet communication becomes more familiar and that, in any case, new barriers soon become erected to replace the old ones. Research has shown, for example, that new social hierarchies can come into being, with some user designations deemed to have less 'status' than others.

Moreover, for all the phenomenal growth in use of the net over the last few years, the regular and sustained use of it and of its associated skills (e-mail etc.) is still the preserve of social groups already highly educated, relatively well off, in work and with access to the requisite support services. The growth in the political uses of the net will simply serve to concentrate power in the hands of those elites even more than it currently is unless real efforts are made to equalise political and knowledge access, something to which very few countries seem to be effectively committed.

Thus, the best one can say in this context is that the possibility certainly exists for more widespread use of the internet to be a powerful force in reshaping current democratic structures and processes-by increasing access, providing more information and developing new channels of communications between citizens and between citizens and other groups like governments. This could provide ways of both increasing participation and reshaping representation. However, what will be necessary to ensure that the impact is positive rather than negative has little to do with the new technologies by themselves. Rather it will be intimately connected to the practices of the society more generally, into which-perhaps-such new technologies might become embedded.

Lobbying

The second area to consider is the role new communications technologies might play in respect of participation by citizens and other groups through lobbying. This is something highlighted by Castells in his treatment of informational politics. By definition his understanding of this phenomenon bespeaks a huge increase in lobbying, as has clearly happened in recent

years in Washington and London and also in Brussels. The apparatus of the new communications technologies (mobile phones, fax, e-mail, the internet, multimedia facilities, etc.) acts greatly to increase the ease of establishment and the productivity of lobbying groups.

The question is whether an increase in lobbying activity represents a strength or a weakness in democracies? A long-standing plank of 'Madisonian' democratic theory has been the creation and sustenance of effective checks on executive power coupled with effective expression of citizens' interests. Both these tasks, it is sometimes claimed, are performed by well-organised lobbying groups. Therefore, in as much as new technologies can help such groups perform more effectively, they are aiding the development of a robust democratic process and enhancing the possibility that it will not act in a 'tyrannous' way (in Fishkin's sense). Moreover, in as much as such groups often provide expert knowledge on thorny questions of public policy they might also be an aid to representation-and even to deliberation-as well.

The danger lies in the possible impact of such groups on effective political equality and also on actual (as opposed to ersatz) participation. If lobbying requires new technologies and new technologies cost money, then it is likely to bias a political system towards those who already have the requisite financial resources and necessary informational skills and knowledge, cutting out those who have neither: the same danger we witnessed in our discussion of the net above.

Moreover, it is always possible that on some issue area or other one lobby might become so powerful as effectively to block policies inimical to its interests and thus violate not only the political equality condition but also the non-tyranny condition as well. Think, for example, of the role of the National Rifle Association (NRA) in the USA or the power of the tobacco lobby, even in the greatly unfavourable political conditions at present. The fact that lobbying is made easier and more accessible through the use of new technologies-the Mexican Zapatistas were able to communicate and lobby the outside world via the internet, bypassing the Mexican government-does not of itself

negate the role that money and influence has in making lobbying more or less effective. This is a clear problem for *any* democratic institutional arrangement. The point is that simply opening the channels of communication with government through the assistance of new technologies does nothing of itself to address the fundamental distribution of powers which underlies the effectiveness and influence of more traditional lobbying.

Direct Democracy: Perhaps the most widely cited area where new technologies could impact on democratic processes is in the area of increasing participation through a growing move to 'direct democracy'. What Fishkin calls the 'lure' of direct democracy has been apparent for a very long time. Classical Athens was, after all, a direct democracy, albeit one with a limited conception of citizenship. The lure of democratic publics actually making their own decisions, rather than having representatives do it for them, speaks to one of the deepest assumptions of all democratic politics: that people should rule themselves.

It is certainly the case that it would now be technologically possible to 'wire up' electorates through television and/or PCs to create a genuine 'teledemocracy' that enables people to vote on specific yes/no issues (referendums) or even on more general aspects of public policy in their own homes. There is a good deal of evidence that enthusiasm for this is increasing: the experiments in the US with 'electronic town halls' for example, technologically based versions of traditional town meetings to discuss local budgetary issues etc. The new *Sunday Herald*'s virtual poll on issues of the week is another example of the increasing sophistication of modern media in the age of informational politics.

Direct polling of citizens by government does not necessarily imply elimination of all representative institutions, of course. Legislative assemblies might still exist as agenda setters, and executive and judicial branches of governments might exist as before (though a parliamentary system such as Britain's, without a written constitution, might have more trouble adapting than most in this context). Moreover, as Ian Budge has pointed out, there are a number of possible varieties of direct democratic

forms. The most powerful evidence in support of the view that we are witnessing a growing move towards direct and majoritarian-at the expense of representative and Madisonian-forms of democracy is provided by the growth in popularity of what Fishkin refers to as the 'plebiscitary model'. This is most obviously shown in the growing use of referendums around the world. It is also echoed by the increasing reliance of politicians and other political actors on focus groups and opinion poll evidence.

This development is not directly tied to new technologies. However, it is assisted by them. Because of the speed of communication, as well as the 'blizzard' of available information, political actors can now feel a need to keep in constant touch with the subtle shifts in popular mood in order to tailor their policies, or at least their presentation, more effectively for the moment. With the growth in participation and the use of intermediate tests of public opinion the gap between poll and referendum will shrink.

There are, moreover, increasing attempts to yoke new technology to this phenomenon. The futurist writers Alvin and Heidi Toffler are enthusiasts for what they call 'semi-direct democracy' (as was, until his fall, their admirer, former House of Representatives Speaker Newt Gingrich) involving grander versions of the 'electronic town halls' referred to above. The debate over ICT strategy for the Scottish Parliament has made a similar connection.

There are two principal objections to moving towards a more 'direct' democracy. First, although it would increase participation, the risks of weakening 'deliberation' capacity should not be underestimated. That could be dangerous since, as Fishkin puts it, 'the deliberative competence of mass publics is suspect'. This is not simply an echo of a Tocquevillian or Millite suspicion of the 'tyranny of the majority'-though it is certainly also that. There is also a danger of taking ill-informed decisions, such that the public might will the end but not the means. In California, for example, there is not enough prison capacity for the 'three strikes and you're out' validated in a recent referendum, but equally there is no desire to raise taxes

to build more prisons. The policy has been willed but is in practice unworkable. Whatever else it is, this is a failure of deliberation, encouraged in this instance by the growing direct/ majoritarian tendencies evidenced in continuous snapshot polling and statewide referendums.

The second objection is that direct democracy is the purest form of majoritarianism and would probably in most cases, at least potentially, violate the non-tyranny rule: frequent policy choices which impose deprivations on sections of the community where other options would not have done.

Aside from these two objections many of the other dangers already discussed in the context of the media's influence on politics would also be present. The mere fact of voting by TV or PC would not abolish the media-space of informational politics. The fragmentation, the gossip and the lobbying would continue: it would simply be more directly aimed at citizens than is the case at present. Of course, it is possible to imagine publics sometimes behaving more sensibly than representatives do. Nevertheless, the dangers of the majoritarian, non-deliberative model are clear for all to see.

The conclusion from this analysis must be that the current impact of new technologies on democracy seems to be increasingly to emphasise participation over representation but at the same time to fail adequately to address questions of deliberation altogether. This is not a necessary situation but it does appear to be the general direction in which new technology is leading democracy.

Bio-technology and Other Advances: In a moment we will turn to an assessment of this in the context of the wider public realm and an evaluation of some possible policy choices. Before this however, there is one coda on new technologies that needs to be addressed.

This report has concentrated on new 'informational' technologies and their impact on democracy, for the simple reason that these are the new technologies which are currently having the most impact on democracy and are likely to continue to do so in the medium term. It is also important to flag, however, the emergence of other areas of new technology which

may come to have an impact on democracy, perhaps sooner than we might now imagine. These technologies include, perhaps most significantly, bio-technology, but also nano-technology and such areas as artificial intelligence.

Perhaps the most important aspects of these emergent technologies for our present concern is that all of them are likely to raise difficult questions about how we should now conceive of human beings as 'selves'-discrete and autonomous entities continually existing over time. Democracy, as we remarked at the outset, is predicated on the importance of self rule. But the question raised by these technologies is precisely, how should we conceive of 'self'? Debates over cloning, for example, are currently dominated by ethical questions as to whether human cloning should be allowed and if so what kinds of limitations or restrictions should be put upon it. However, if it is allowed (and irrespective of what limitations are put upon it in the short term) it will then start to raise political questions that will profoundly impact upon traditional conceptions of democracy. It is hard to see bio-technology or artificial intelligence (over the even longer term) not having a radical impact on the way we see the notion of 'selfhood', for example, as such it is bound to impact on a conception of what 'self rule' might be.

Potentially, then, these technologies might start to change our views and perhaps our practices most radically of all. Without prejudging a debate that has yet to begin in earnest, it seems likely that those notions of expansive democracy that emphasise the transforming self are better placed to cope with these issues than current structures of SLD, however those processes are currently being altered by the new technologies which are the central focus of this report. At the least we might well see in the future more emphasis placed on the transformative aspect of ED, something that figures only tangentially in current discussions of the role of new technologies (with the discussions about the possible liberating effect of the net partially excepted). Again, these trends are likely to increase the gradual move away from traditional structures of SLD that we have already observed.

Electronic Democracy and the Public Eealm: Several times we have referred to the importance of looking at aspects of the public realm beyond narrow definitions of democratic structures or processes. This short chapter offers some reasons for supposing that the current (dominant) trajectory of 'electronic democracy' is more likely to be harmful to the public realm than not, as a preface to a conclusion which will offer some suggestions for policies which might help to reverse this trend and open avenues for some of the more positive possibilities inherent in the new technologies.

By the 'public realm' we mean to imply the wider political culture in which democratic politics is embedded and which provides the 'soil' which will either encourage its growth or, if we are unlucky, prevent it. In most contemporary democracies that political culture consists of an overlapping set of assumptions shaped by many different aspects of a society's history, culture, language and political orientation. In Britain, for example, the four nations that make up the British state have a 'public realm' constituted by overlapping aspects of their joint histories as well as some things generally shared-most important in our current context a commitment to broadly liberal constitutional politics.

If the above analysis of the impact of new technologies is plausible, then the current impact of new technologies on Britain as a whole, as on most countries which have a broadly SLD institutional arrangement is, in the first place largely a trajectory heading in the general direction of greater direct and majoritarian government. Countering this, to some extent, is the fact that the political culture of Britain-as to a greater extent is true with other members of the EU-is now embedded, albeit controversially, in that of the EU itself and this has its own evolving problems of governance both democratic and otherwise.

Secondly, the one thing new technologies are not doing-though little else is either-is enhancing capacities for deliberation, either for decision makers or for citizens. Indeed, by elevating possibilities for greater participation in the context of 'informational politics', new technologies are serving to

weaken the processes for a more reflective and constructive deliberation that might already exist outside that context. New technologies can increase opportunities for participation. They might vary and broaden structures of representation (as in the case of the Highlands and Islands Alliance). But for deliberation, as such, they can do little.

A number of people have commented on this and sought to do something about it. Fishkin's attempt to deepen the deliberative element in contemporary democracy is to swim with the direct/majoritarian tide, but to use it to enhance deliberation through the widespread use of what he terms 'deliberative opinion polls'. These take representative samples of citizens away to be closeted together for a week or more to argue through an issue. They are given information about the issue and the power to call experts or witnesses and are then polled at the end of this period. This might be seen as a compulsory duty, like jury service. Indeed, citizen's juries, which a number of public authorities in the UK have experimented with, are one specific example of the Fishkin idea in practice.

The advantages of the deliberative polling technique would seem to be that not only are the results of 'snapshot polls' and 'deliberative polls' markedly different-showing perhaps that deliberation does indeed alter decisions-but that individuals who participate in such deliberative polls are strongly engaged by the experience and energised in their democratic commitments for the future. This perhaps gives some evidential support for Warren's emphasis on self-transformation as a key element in expansive democracy.

Even so, Fishkin's ingenuity in adapting a direct/majoritarian form for a deliberative purpose surely fails to address the problem leading to the 'direct/majoritarian tide' in the first place-the rise of 'informational', 'sound-bite' politics. In consequence, the result is likely to be that 'deliberative polls', even if widely adopted, would be only one set of polls amongst many others and could not on their own arrest the move towards a less deliberative and more direct democracy.

A second general observation on the impact of technology on the processes of democracy relates to access. Currently new

technologies are largely, though certainly not exclusively, dominated by the political, commercial and other elite groups. There is little chance that meaningful increase in democratic participation or even the structures and processes of representation will happen unless the opportunity to participate in the use of new technologies is deepened and widened. This will require, at a minimum, greatly enhanced educational opportunities, and a sharp decrease in the current levels of social exclusion to be found in most democratic societies. The technology alone may tend to emphasise the quantity and frequency of participation as against its quality in terms of prior deliberation and the extent to which it is representative of society as a whole.

Third, democratic politics cannot be separated from the wider values of which it is a part, indeed on which it rests. Democracy requires of its participants a willingness to compromise, to accept second best solutions if first best solutions (from your perspective) would seriously damage other sections of the community. It is this feature of democratic politics which resonates most strongly with the liberal tradition. It has traditionally been held to require a mix of institutional structures which can allow such compromises. In any event deliberation, amongst citizens and assemblies, is an absolute essential to this, as is the possibility of the admission of error and the recognition of learning from past mistakes.

In as much as current new technologies are enhancing direct/majoritarian tendencies without giving due attention to processes of deliberation and without taking on board wider questions of social exclusion, access and education, they are likely to reduce spaces for meaningful compromise and will thus weaken the central role of toleration in our societies. Unless this is recognised and addressed, far from enhancing our democracy, the new technologies may hasten the undermining of its fundamental cultural and political base.

Suggestions for Policy: So what might we do? The first thing is to admit the great potential of new technologies for enhancing democracy without supposing either that this is yet happening or that it will necessarily happen without a lot of

sustained effort. There are very considerable opportunities, but so too are there risks. Those can most effectively be minimised if we first open our eyes to both the benefits and the potential costs of the change in the culture of democracy that the new technologies are bringing about and are likely to continue to bring about. This report has surveyed the latest evidence in that context. We close with a number of suggestions for policy makers to consider as they begin to experiment with models aimed at increasing participation and moving closer to 'direct democracy'. They apply with particular resonance in Scotland at a time when we are already embarked on a refashioning of the processes and structures of democracy in this country.

- First, current trends in greater use of the internet/e-mail etc. between citizens and government and between citizens and other groups need to be encouraged and enhanced as part of a public strategy of bedding down the increases in participation such trends imply and to make sure that such participation is broadly based. The realities of social exclusion and elite dominance must be addressed if a move in this direction is not to result in further fragmentation rather than a more inclusive politics. In the long term this will mean strategies for reducing such exclusion and for enhancing education, addressing the root causes of these divisions. But in the short term we need to address the symptoms, perhaps through the creation of publicly-supported sites where citizens can use the internet for free, not run for profit and with a clear public remit.
- Secondly, a very close watch must be kept on the character and extent of lobbying using the new technologies. This is not to suggest that such lobbying should be or in reality could be prevented. But the extent to which it systematically distorts effective political equality should be monitored. Government has always had a habit of responding more readily to the vocal, the articulate and the organised. Any new rules on lobbying and access must bear in mind the potential use of the new technologies to open up new channels of privileged access.

- Thirdly, greater use should be made of devices that enhance deliberation, such as deliberative polls and citizen's juries. In order to counter the trend towards a more direct and majoritarian democratic culture such polls should become a *de facto* part of governmental decision procedures, with transcripts of deliberations and results should made available to the public (both hard copy and online). This should be coupled with a decrease in the use of non-deliberative plebiscitary techniques (snapshot polling, referendums). Snapshot polling on individual issues might also be regularly monitored and perhaps made the focus of a rolling deliberative poll in order to test its validity. This would reduce the 'direct/ majoritarian tide' without denying the value of direct democracy as such. It would also enhance deliberation. The recent report of the Consultative Steering Group on the Scottish Parliament encouraged greater participation in decision making and listed a range of options in its Annex G. Of these options, those which are more likely to increase deliberation should be favoured.
- Fourthly, any attempt to shape the political culture by appeal to special interests (be they ethnic, religious, gender or other) should be very closely examined. Context would be all in such cases. In any event, any move to a less tolerant, less inclusive public sphere should be strongly resisted, whatever the specificmerits of any given case. As we have argued, democracy, at least a deliberative, tolerant and robust democracy, cannot flourish in the absence of toleration and mutual respect. The persistent absence of such respect, or its perpetual violation, whether in formal public institutions or on the internet, will corrode the basic conditions on which such a democracy must rest. Aspects of lack of respect will, of course, be present in any society and should certainly not be banned from the private sphere. But it should also be recalled that the terrain between the public and private spheres is, rightly, a contested one. It is the non-violent mediation of such contestation that democracy, uniquely, has managed to

provide. Any sign that the introduction of new technologies is shifting the culture away from these prerequisites should be swiftly identified and remedied.

Finally, we might conclude with the thought that given the upheavals in British and Scottish politics at the moment, now is a good time to try some new experiments with democracy. Ralph Lummis makes an observation in his recent book to the effect that "democracy is better described not as a 'system' or a set of 'institutions' but as a state of being and that the transition to it is not an institutional founding but a change of state". This implies, as he notes, that democracy *per se* cannot be institutionalised. However, as he also notes, this should not be taken as a denigration of democratic institutions. As he says, with wry humour, "laughter cannot be institutionalised-which does not mean that we should abolish institutions such as the comic theatre... health cannot be institutionalised-which is no argument against hospitals and doctors".

3

Hurdles in E-Governance

Operational

- No clear revenue stream for the private sector,
- Lack of coherent government policies,
- Inappropriate processes for tendering.

Economic

- Government unwilling to commit funding.
- No above-the-line treatment of IT spend.
- Viability of Public Private Partnership uncertain.

Planning and Implementation

- No clear road map with measurable milestones.
- Low emphasis on process re-engineering.

Personnel

- No champion identified for e-governance.
- Lack of ownership of projects and frequency of personnel transfers high.

E-governance is a big project so it should be implemented in a phased manner. Computer network and Internet are the major tools of E-governance. In order to make a government authority more responsible and accountable there is need to identify functional areas in every ministry or department E-governance requires careful planning and formulation of strategies for effective implementation. E-governance solution must have multiple strengths, as it has various aspects like issuing of certificates, permits, licenses, grievance redressal, collection of payment.

While initiatives have been emanating from various directions, they are often at cross-purposes and so receptive and wasteful. Accordingly critical issues need to be delineated and solutions worked out.

Technology Issues

A number of organisations both in Centre and the states have commendable initiatives to develop hardware and software platforms to address the challenges of E-governance.

Use of IT for delivery of public services:

- Promotion of use of e-mail, bulletin boards, besides setting up Website for all ministries and government departments, displaying Information of interest or relevance to the public as well as setting up enabled grievance cells.
- There must exist a large inventory and repository of appropriate technological platforms on which public functions in a cost and time effective manner can be performed.
- To have synergic initiatives which cause financial, technical and Organisational match
- Efforts by academic institutions like IIMs and IITs, sectoral government institutions like IITA, LBSNAA, State Training Institutions and Private Companies like IBM, LOTUS, GIS Product Companies are slated to be synergised. Efforts by international organisations (G8-GOL), Kennedy School of Government, Institute of Electronic Governance, Washington etc. should be targeted for adaption and adoption. This will yield multiple shopping, electronic data inter-change (EDI), secure electronic mails, government applications and services, online health services, etc.
- Transactions between various departments of the government and other government organisations should be networked so that a substantial part of transfer of files and paper can be replaced by internet within the government.

- E-mail to be incorporated in the normal range of contact methods and departments and agencies should implement arrangement for rapid response to e-mail queries.
- There should be a single web based front-end for all government services to the public.
- Certification Authorities provide digital certificates. Some of the certificate-enabled applications are online banking, cyber shopping, electronic data inter-change (EDI), secure electronic mails, government applications and services, online health services etc. Hence steps should be taken to identify such certification authorities.

Political Issues

- Delivery of public services like utilities, rural and urban development schemes through EDI, Internet, and other IT based technologies would necessitate procedural and legal changes in the decision and the delivery making processes as well as institutions.
- Fundamental changes in government decision management: Government should have IT ministries in all states in India.
- Mandatory changes in the legal provisions to give effect to the technological objectives.
- Identification of government departments with maximum citizen interface like public grievances (electricity, water, telephone, public transport, police), rural services (land records etc.), social services (registration of licenses and certificates, birth and death certificates, school registration, old age, widows, ex-gratia scheme etc.), public information (employment exchange registration, transport time tables etc.), agriculture sector (crop disease, market price etc.), commercial (taxation, duties, company returns etc.) and many more.

Social Issues

- The mind set can be changed to a large extent by providing enough number of computers to government and offering training to the staff.

- Seminars aided by internet at the panchayat level, block level, district level by pooling resources and effective utilisation of resources based on social justice and social development oriented priority.
- Enhancement of the capabilities of individuals, groups, families, and communities and empowering them with the digital democracy.
- Empowerment of socio cultural complexes like arts club, sports club, youth club, cooperatives, libraries etc. through IT. They should be given important place in digital democracy.
- Priorities should be given to people of weaker sections in setting up kiosks and fee to be charged by the information kiosks should be fixed by the government.
- Focused efforts to use local languages in the IT implementation process and improving the technologies for transliteration.

Management Issues

- Mandatory, organisational and institutional changes effecting both people and methods should be properly understood, accepted, internalised, adopted and improved to enable full advantage of the technology.
- D- layering of the decision making should be done leading to re-engineering and appropriate sizing of the decision making machinery
- Training of the personnel at all levels more so at lower rung of government management organisations.

Funding Issues

- 3% of the budget should be committed towards E-governance and amount should be spent in the ratio of 40:30:30 on hardware and software and services respectively.
- The government should identify project champions who can push in evaluation procedures in government departments and states and also re write tendering and bid-evaluation procedures to encourage private participation.

The last couple of years have seen e-governance drop roots in India. IT enables the delivery of government services as it caters to a large base of people across different segments and geographical locations. The effective use of IT services in government administration can greatly enhance existing efficiencies, drive down communication costs, and increase transparency in the functioning of various departments. It also gives citizens easy access to tangible benefits, be it through simple applications such as online form filling, bill sourcing and payments, or complex applications like distance education and tele-medicine.

Government Initiatives

The national e-governance plan (2003-07) reflects the strategic intent of the central government in the right perspective. Many projects are earmarked under this plan, and it is trying to address the digital divide.

That from, a political perspective, after watching the performance of some IT-savvy states in the recent elections, the system has woken up to the need to focus more on rural development. "The political systems are keener to use IT to disseminate information faster to farmers, disburse loans, improve education and the health systems in villages, etc. There is a clear-cut incentive to do it as 60 percent of the vote-bank still lives in rural India."

E-governance has to be supported by the will and resources of those who are in governance, be it at the central or state level. The central government has analysed and appreciated the concept by creating a separate e-governance department headed by a secretary to trigger e-governance in India. The World Bank, ADB and UN have been approached, and in response they are generously funding e-governance projects.

In future, education, agriculture, state wide area networks (SWANs) and Community Information Centre projects will be rolled out backed by a strong public private participation model (PPP) to achieve long-term sustainability.

Projects with PPP models in these segments can

revolutionise the governance experience. In the next couple of years the industry is expected to grow by 22-25 percent.

Getting Better All the Time

Most vendors foresee strong government initiatives to make the most of IT, and the future for e-governance looks bright. Deployment and training on e-governance applications, Cisco is working with various state governments. The company, along with the United Nations Development Programme (UNDP) and National Institute of Smart Government (NSIG) is hosting India's first South Asia Public Sector ICT Summit, a two-day conference, on January 24 and 25 in Hyderabad. The theme of the summit is 'New Models for e-Government in South Asia and the World,' and is targeted at senior government and policy makers from countries in South Asia, including India.

Origins in India

E-governance originated in India during the seventies with a focus on in- house government applications in the areas of defence, economic monitoring, planning and the deployment of ICT to manage data intensive functions related to elections, census, tax administration etc. The efforts of the National Informatics Centre (NIC) to connect all the district headquarters during the eighties was a watershed. From the early nineties, e-governance has seen the use of IT for wider sectoral applications with policy emphasis on reaching out to rural areas and taking in greater inputs from NGOs and private sector as well. There has been an increasing involvement of international donor agencies such as DfID, G-8, UNDP, WB under the framework of e-governance for development.

While the emphasis has been primarily on automation and computerisation, state endeavours to use IT include forays into connectivity, networking, setting up systems for processing information and delivering services.

At a micro level, this has ranged from IT automation in individual departments, electronic file handling, access to entitlements, public grievance systems, service delivery for high volume routine transactions such as payment of bills, tax dues to meeting poverty alleviation goals through the promotion

of entrepreneurial models and provision of market information. The thrust has varied across initiatives, with some focusing on enabling the citizen-state interface for various government services, and others focusing on bettering livelihoods.

State-wise Teledensity

States	***Urban***	***Rural***	***Tta***
Delhi	30.2	0	26.9
Punjab	25.7	4.6	11.6
Kerala	23.7	7.9	11.1
Andaman & Nicobar	15	7.7	9.6
Maharashtra	19.3	2.2	9
Himachal Pradesh	39.6	5.4	8.4
Tamil Nadu	15.2	2.1	7.8
Gujarat	17.8	2.5	7.4
Karnataka	15.8	2.4	6.5
Haryana	16.5	2.3	6.1
Andhra Pradesh	16.5	2	5.6
Uttaranchal	12.6	1.3	4
West Bengal	11.5	0.9	3.7
Rajasthan	11.3	1.3	3.4
Madhya Pradesh	10.2	0.6	2.9
North East	9.2	0.9	2.7
Jammu & Kashmir	8.3	0.5	2.5
Orissa	11.3	0.9	2.2
Uttar Pradesh	8.8	0.6	2.1
Assam	11.5	0.5	1.9
Jharkhand	6.1	0.4	1.6
Chhattisgarh	5.6	0.4	1.4
Bihar	9.3	0.5	1.3
Total	**15.2**	**1.5**	**5**

E-Governance Market

The Economic Times recently reported that the government in India is emerging as the fourth largest vertical spender on information technology after the telecom, manufacturing and banking and finance industries. Indian government has spent around 1 billion USD on information technology in 2002. This includes the expenditure of the Central and state governments on hardware, software, telecommunication equipment, telecommunication services, and IT services, but excludes salary costs of IT staff.

In fact, the government accounted for 9 per cent of the total IT spend in India for the year 2002, and in five years that is estimated to go up to 15 per cent. Though e-government is still in its infancy, over 20 states/union territories already have an IT policy in place. In terms of basic computerisation, police departments, treasury, land records, irrigation and justice are seen as having the maximum potential.

Nasscom estimates that in the next five years, state governments in India will spend close to Rs. 15,000 crores on computerising their operations. The pressure to be IT-savvy is not only to keep with times, but comes from a more pragmatic dimension; loans to governments from multilaterals have now become more or less contingent upon a proper treasury management system which translates into a computerised system that will tell lending institutions what has happened to the money that it has lent. Currently, India's manual treasury systems don't permit this with the kind of transparency required.

For governments, the more overt motivation to shift from manual processes to IT-enabled processes may be increased efficiency in administration and service delivery, but this shift can be conceived as a worthwhile investment with potential for returns. As is evident in the celebrated case of Saukaryam (Vishakapatnam, AP), computerisation and more efficient back-end processes can actually imply revenues for governments. Saukaryam is self-sustaining and does not require government funding. More importantly, the real spin-off is in the enhanced image of the government as being citizen-friendly.

Some E-governance Initiatives

State/Union Territory Initiatives covering departmental automation, user charge collection, delivery of policy/programme information and delivery of entitlements:

Andhra Pradesh: e-Seva, CARD, VOICE, MPHS, FAST, e-Cops, AP online—One-stop-shop on the Internet, Saukaryam, Online Transaction processing.

Bihar: Sales Tax Administration Management Information.

Chhattisgarh: Chhattisgarh Infotech Promotion Society, Treasury office, e-linking project.

Delhi: Automatic Vehicle Tracking System, Computerisation of website of RCS office, Electronic Clearance System, Management Information System for Education etc.

Goa: Dharani Project.

Gujarat: Mahiti Shakti, request for Government documents online, Form book online, G R book online, census online, tender notice.

Haryana: Nai Disha.

Himachal Pradesh: Lok Mitra.

Karnataka: Bhoomi, Khajane, Kaveri.

Kerala: e-Srinkhala, RD Net, Fast, Reliable, Instant, Efficient Network for the Disbursement of Services (FRIENDS).

Madhya Pradesh: Gyandoot, Gram Sampark, Smart Card in Transport Department, Computerisation MP State Agricultural Marketing Board (Mandi Board) etc.

Maharashtra: SETU, Online Complaint Management System—Mumbai

Rajasthan: Jan Mitra, Raj Swift, Lokmitra, Raj Nidhi.

Tamil Nadu: Rasi Maiyams–Kanchipuram; Application forms related to public utility, tender notices and display.

North-Eastern States

Arunachal Pradesh, Manipur, Meghalaya, Mizoram and Nagaland: Community Information Centre. Forms available on The Meghalaya website under schemes related to

social welfare, food civil supplies and consumer affairs, housing transport etc.

Even as e-governance signifies a business opportunity for industry and a strategy for the government, from a citizen perspective, there exists an overarching concern. Not how much can be spent, but what could be achieved is really the moot point. Setting up MIS may be an important and necessary exercise but very often cost-benefit analysis is not done and public money is used up in avenues that are not meaningful.

A classic example is of buying hardware (like colour laser printers) far in excess of requirements or buying computers without a clear training plan for staff. There are larger implications of the absence of visioning. Without a clear vision, huge investments in the name of e-governance may not really contribute to improve the quality of life of citizens despite huge potential.

MIS systems like DACNET of the Ministry of Agriculture have received flak for being no more than tools to control agricultural development activities rather than act as a facilitative platform for informing multiple stakeholders about how agriculture can be developed in India and supporting them in improving productivity and participating in markets, including global markets.

Without clear vision, huge investments in the name of e-gov may not really contribute to improve the quality of life of citizens, despite there being huge potential in this

Applying the lens of good governance – the cornerstones of equity, accountability, transparency, participation, responsiveness, strategic vision, and rule of law-to what is happening on the ground.

E-readiness

The deployment of IT for furthering the priorities and goals of governance is dependent on many factors. There are many constraints on realising the presumed potential uses of IT and these reflect the readiness of governments to appropriate IT for pursuing development. Among the most obvious and critical is the connectivity factor.

State/Union Territory	***Official Website***
Andaman & Nicobar (UT)	http://andaman.nic.in/
Andhra Pradesh	http://www.aponline.gov.in/apportal/index.asp
Arunachal Pradesh	http://arunachalpradesh.nic.in/govt.htm
Assam	http://assamgovt.nic.in/
Bihar	http://bihar.nic.in/
Chandigarh (UT)	http://chandigarh.nic.in/
Chhattisgarh	http://chhattisgarh.nic.in/
Dadra & Nagar Haveli (UT)	http://goidirectory.nic.in/dadra.htm
Daman & Diu (UT)	http://daman.nic.in/
Delhi	http://delhigovt.nic.in/newdelhi/index.html
Goa	http://goagovt.nic.in/
Gujarat	http://www.gujaratindia.com/index.htm
Haryana	http://haryana.nic.in/
Himachal Pradesh	http://himachal.nic.in/
Jammu & Kashmir	http://jammukashmir.nic.in/
Jharkhand	http://jharkhand.nic.in/
Karnataka	http://www.kar.nic.in/govt
Kerala	http://www.kerala.gov.in/
Lakshadweep (UT)	http://lakshadweep.nic.in/
Madhya Pradesh	http://www.mpgovt.nic.in/
Maharashtra	http://www.maharashtra.gov.in/
Manipur	http://manipur.nic.in/
Meghalaya	http://meghalaya.nic.in/
Mizoram	http://mizoram.nic.in/
Nagaland	http://nagaland.nic.in/
Orissa	http://orissagov.nic.in/
Pondicherry (UT)	http://pondicherry.nic.in/
Punjab	http://punjabgovt.nic.in/
Rajasthan	http://www.rajasthan.gov.in/
Sikkim	http://sikkim.nic.in/
Tamil Nadu	http://www.tn.gov.in/

Contd....

Tripura	http://tripura.nic.in/
Uttar Pradesh	http://www.upgov.nic.in/
Uttaranchal	http://www.uttaranchalassembly.org/government.html
West Bengal	http://www.wbgov.com/e-gov/IntroJpgNew.htm

Teledensity

About connectivity in India, the following remarks by Prof. C.P. Chandrasekhar, (from the India Country Paper in "Promoting ICT for Human Development in Asia: Realizing the Millennium Development Goals") is significant to our analysis:

Data suggests that India may be on track to realise the required degree of diffusion of tele-communications technology, even if at a slow (but accelerating) pace. Recently released figures indicate that telephone density has touched 5 per 100 inhabitants as on March 31, 2003, compared with only 1.39 at the end of March 1994, when the shift to a new, more liberal telecom policy began. Since then the rate of expansion of connectivity has indeed been rapid, with tele-density touching 2.86 lines per 100 people on March 31. 2000, 3.64 on March 31, 2001, 4.4 on March 31, 2002 and 5 as on March 31, 2003.

While this growth in connectivity is expected to substantially increase interactive communication between distant centres, permit improved governance through the more efficient delivery of information and a range of social services in rural areas as well as expand access to the internet and the benefits it can provide, there are some problems with using aggregate tele-density as a measure of the extent of technology diffusion.

The aggregate figure conceals the low penetration of telecommunications capacity and a high degree of urban and regional concentration. Tele-density in rural India in 1999 was just 0.4 lines per 100 people. Rural tele-density, which crossed one per hundred in 2002, stood at 1.49 in 2003, when urban teledensity was placed at 15.49. Further, inter-regional variations were also substantial. As on March 31, 2003 while

total teledensity in the state of Delhi was 26.85, that in Bihar was as low as 1.32.

Besides, the figures also appear to be substantially influenced by the recent growth of the mobile telephony sector. Given that a very large proportion of cellular phone subscribers are those who subscribe to the service in addition to holding a regular landline, the rise in telephone density as a result of an increase in cellular telephone connections can hardly be taken as indicative of the diffusion of telecommunications technology among those who were thus far marginalised from the network.

If we consider Public Call Offices (PCO) related data as a measure of diffusion among the marginalised, the story is rather discouraging. The number of PCOs that could be converted into telecom kiosks or centres with internet connectivity stood at just 10.6 lakh at the end of March 2002. This figure amounted to less than 3 per cent of the total number of DELs in the country. Further, while the population in rural areas amounted to more than 70 per cent of the total, the number of rural DELs worked out to just 23.5 per cent of the total. Finally, despite the government's efforts to reach a telephone connection to each of India's 600,000 villages, the total number of village public telephones at the end of March 2002 amounted to 469,000.

These figures are clearly indicative of a digital divide driven by asset and income inequalities, such that there a few at the top who are connected while the majority, preponderantly in rural areas, are marginalised from the communications network.

Internet Connectivity

Even if connectivity in the form of a communications link is established, there is no guarantee that this can be viably expanded to connect India's villages to the world through the internet. Despite its large population, the success of its IT industry and the government's stated intent of wiring India's villages, India today lags far being many other developing countries in terms of the bandwidth necessary for people to simultaneously access information flow through the Internet.

In 2001, the International Telecommunications Union estimated bandwidth availability in India at 1475 megabits per second (Mbits/sec), as compared with 2639 in Singapore, 5432 in South Korea, 6308 in Hong Kong and 7598 in China.

A composite measure of e-readiness that places e-governance initiatives alongside other IT achievements has been employed by NCAER in a national level survey. The survey rated the states' performance on six broad parameters-network access, network learning, network policy, network society, e-governance, and network economy.

Even though performance on e-governance is one of the parameters in this survey, one can argue that the effectiveness of e-governance may itself be implicitly dependent on the other parameters constituting e-readiness.

Open Source is taking off because buying and upgrading proprietary software is expensive. It is safer to entrust knowledge in the public domain to Open Source, which is also in the public domain, than to proprietary platforms.

The parameters are described below:

Network access included indicators such as tele-density, percentage of households with phones and cable TV, cellular phones, number of PCs and Internet connections, average price per hour of Internet use, number of cellular operators, telecom staff per 100 lines, and the number of villages covered under the village public telephone network.

Network learning was monitored in terms of percentage of colleges and schools with Internet access and computer labs, universities offering infotech courses, number of websites of schools and colleges, number of registered training centres, percentage of students passing out from ICT courses, percentage of IT-qualified teachers, and percentage of government employees covered under online training programmes.

Network policy was evaluated on the governments' efforts to address issues related to telecom, e-commerce taxation, presence of IT policy, and cyber laws.

Under e-governance, the study monitored rural connectivity; IT applications in agriculture, education, and health services;

and, computerisation of land records. Network society and economy were measured by the number of online companies, local language websites, and number of households having access to Internet. The number of IT parks, employment in the IT parks, and sales turnover of the companies in the IT parks were also taken into consideration.

The NCAER survey identified Tamil Nadu, Karnataka, Andhra Pradesh, and Maharashtra as the leading States in terms of "e-readiness". It must be mentioned here that the parameters may provide crude proxies to understand the relative performance of states across different IT-related parameters, but nascency in the process of ascribing weightages to the parameters makes ranking a difficult exercise. Also, we must bear in mind that the parameters described cover e-readiness for embracing the IT revolution rather than e-governance.

IT Policies: This section will take a look at IT policies in the various states and examine them from how governments have conceptualised the use of IT to meet development goals. While it is important to critique failures in implementation, it is equally important to look at statements of intent and identify their lacking. The breadth of vision obviously has a critical role to play in the length of achievement. Interestingly, at least two states-Karnataka and Andhra Pradesh-have redefined their policies, bringing out the second version, in the light of the rapidly changing macro context and to plough back their own learnings. In our analysis of state policies, six areas of focus-agriculture, health, education, local language, welfare of socially disadvantaged groups and e-governance-have been selected to scan through these policies. Some broad observations follow:

Agriculture is an area conspicuously absent in policies. Even in a predominantly agrarian state like Haryana, there is no mention of use of IT in agriculture extension.

References to the use of IT for health is confined to few policies and even here, there is a lack of clarity on how exactly IT can help the larger goal of health.

IT literacy (learning IT) is dealt with in great detail by most governments. However, there is very little reference to the use of IT as a learning tool (learning through IT). Karnataka is one

of the few states that has discussed the potential of multi-media applications to promote literacy. Many policies have a narrow emphasis on IT education, focusing on employment in low skilled jobs in data entry, marketing, transcription, call centres, content creation and data processing. Some even look at this as a revenue spinner. Clearly, this is a short-term and narrow perspective.

Development of applications in local languages has been promised in many policies, but the depth of perspective on what needs to be done to evolve standards, promote local language content and applications and appropriate hardware, is limited to few states like Karnataka, Madhya Pradesh and Tamil Nadu.

The use of IT to help the socially disadvantaged, including in terms of promotion of enterprises by socially disadvantaged has received attention from very few states. Even where IT is seen as having potential for empowering women and the economically disadvantaged, like in the case of Karnataka, the vision is operationalised in terms of creating beneficiary data bases to monitor programmes and automating social welfare departments. The emphasis is on managing programmes rather than on empowering people.

E-governance is limited mostly to e-services and vision on how IT can help governments to interact, transact and elicit citizen participation in agenda-setting is absent. GIS, which can be a critical tool for mapping resources and requirements is sought to be used in very few states like Andhra Pradesh.

One overall observation is that there seems to be a lack of clarity of vision in conceptualizing and operationalising the power of IT for development. It might be worthwhile for states to revisit their policies a la Karnataka and Andhra Pradesh.

In 2001, the ITU estimated bandwidth availability in India at 1.5 Gbps, compared to 2.6 Gbps in Singapore, 5.4 Gbps in S Korea, 6.3 in Hong Kong and 7.6 in China. We have come some way since then, but it's a long road ahead...

E-governance: Although policies may have lofty goals, much seems to have happened only in automation and computerisation. All states and union territories, except Daman

and Diu, have a web presence. However, few have progressed to delivering e-services. Even among them, efforts are in pockets. E-seva is perhaps one of the few e-service initiatives that now has a clear roll out plan to cover all municipalities in Andhra Pradesh. Despite these trends, it must be said that while five years ago IT was the handmaiden of few states like Andhra Pradesh and Karnataka, today most seem to have jumped on to the bandwagon.

Very few initiatives in India seem to have ventured into the more complex areas that transcend the efficiency and management concerns of governments and put in place programmes addressing quality of life issues. Tremendous possibilities exist in these domains. For example, states can use IT for:

- Services that increase productivity and income of communities -like Warana, Maharashtra; DISK, Gujarat.
- Agriculture extension/Better returns for produce-like Krishi Marata Vahini, Karnataka.
- Service delivery in health-like the Telemedicine Projects in Maharashtra and Andhra Pradesh.
- Service delivery in Education-like Head Start, Madhya Pradesh; Community Learning Centre, Karnataka; Akshaya, Kerala.
- Disaster management-like Flood Management, Bihar; Earthquakes Management, Maharashtra.
- Use of IT based tools for planning and decision making-like the India Health Care project, Rajasthan.

Through the lens of good governance The touchstones to assess the various initiatives in e-governance have to essentially come from expectations of good governance. In that sense, the success of e-governance is not about technological marvels; rather, it is about whether and how good governance has been attained through technology. If we were to operationalise the touchstones, it would encompass the dent that IT interventions have made not only on the goals of efficiency and effectiveness, but equity, transparency, accountability, participation, responsiveness, strategic vision and rule of law. Assessing

states by these is a research project in its own right and there is no conclusive evidence on relative performance of states. However, we can attempt to look broadly at how states have attempted to address these goals.

Equity

The goal of equity addresses the special responsibility of governments to account for the needs of the marginalised. Many initiatives that reach information about policies and programmes and deliver government documents are attempts to reach entitlements to rural populations. In many contexts, such as in the RASI Maiyams of Kanchipuram and the e-seva initiative in West Godavari, micro-enterprise models for promoting employment through kiosks have focused on socially disadvantaged populations. E-seva runs through self-help groups of women in the villages. The partnership between the Government of Karnataka and the Azim Premji Foundation to establish and run community learning centres in the schools in rural areas, especially in certain backward districts aims at equipping the rural schools with state of the art learning resources driven by IT.

We do not have data on the profile of rural users, and whether socially disadvantaged sections of society enjoy equal access to IT mediated governance initiatives. However, it can be said that governments at this stage have not done enough to look at how IT can address the needs of the poor in general and poor women in particular, towards economic and social empowerment. Such a neglect is also seen in the absence of programmes for the urban poor.

The goal of equity can be operationalised at many levels since the digital divide itself is a story of multiple divides. However, ground-level evidence reflects attention primarily to the urban-rural divide, and inadequate focus to the concerns of the illiterate, of marginal farmers, and women.

Outcomes in terms of equity also have to do with how despite intentions, processes at the grassroots are influenced by context-specific factors and therefore everything from the location of a kiosk, the pricing of government information to

cultural barriers to mobility could impact actual access by the marginalised. Also, e-governance efforts may be built willy-nilly on the super-structure of societal inequities, and therefore what you have after IT came in is no different from what existed hitherto.

Constraints that governments face in operationalising equity in their e-governance initiatives is illustrated in the Bhoomi example Central to the Bhoomi project is the computerised system of producing a farmers Record of Rights Tenancy & Crops, an all-important identity paper needed by the farmer to obtain bank loans (for diverse activities ranging from children's education to buying seeds), settle land disputes and even use as collateral for bail. It is no less than a social ID.

A recent article by Keya Acharya, a development journalist in Bangalore, talks about how the problem with Bhoomi is that the state government did not tackle fraudulent land records that went online in the Bhoomi project. Secondly, unlike the village accountant (corrupt or otherwise) who used to be at the village, the Bhoomi kiosks are located at taluka headquarters, which implies costs in terms of time and money for a poor villager.

Transparency and Accountability

Robert Klitggard of RAND has an interesting equation to explain corruption: C = M+D-T. Corruption = Monopoly + Discretion-Transparency. In India, the state holds an absolute monopoly over most of the delivery of basic services. This means that for most of the citizens, there is no exit option available to move from an unresponsive and unreliable provider. This is where e-governance can bring in radical changes. In the Indian case, one can showcase a few pioneering initiatives to underscore the potency of technology to enhance transparency and accountability in matters of governance.

Bangalore City Corporation has recently introduced the Fund Based Accounting System (FBAS) as a strategic management tool. Apart from radically altering the basic financial architecture by generating accurate and timely data, FBAS also loops back the information to the public domain.

This highly enabling framework of integrating backend reforms with front-end outreach has virtually galvanised civic participation by applying this credible and open information base to monitor the activities of the local government.

This initiative (called PROOF -Public Record of Operations and Finance) is an advocacy campaign that uses the quarterly statement of the corporation as a tool to take information about the financial performance of the corporation to citizens. It seeks to bring multiple stakeholders together in an exercise to track financial statements of the government, develop performance indicators for different expenditures, and create a space for management discussion. It seeks to ask the basic question, where is the money of the government going and what value are we getting out of the money being spent.

The work of PROOF has enabled questions to be raised about the assets owned by the city corporation, the way in which these assets are being used, and also the examination of whether development expenditure, like in education, is giving value for money.

Another highly enabling application has been in the field of procurement. Bids and tenders for public works are widely perceived to be the fountain-head of corruption in local governments. Saukaryam in Vishakapatnam has addressed this issue by an e-enabled disclosure process of publishing all financial transactions-bidding and auctions, decisions, tenders, procurement etc. through the net into the public domain.

Online Citizen Charters on key services is another example of using the power of ICT to usher in more transparency and accountability. By openly committing to standards and norms, public agencies are now holding themselves to account. And technology has dramatically altered the ease of public access.

However, there a few downsides to this encouraging scenario. In many cases, the government websites seldom get updated and therefore public information is rendered obsolete. The cutting edge of the Internet is its dynamic interface and if that organizing principle is truncated, the relevance of the medium ceases to exist. The problem of the last mile also looms large.

With a highly skewed pattern of teledensity and the highly disabling profile of rural illiteracy, the reach of the Internet remains exclusive and limited. This means that online information put out by governments may not actually be accessed. Also, civil society groups in India are yet to engage with the government on the basis of what is available on the net. Though there are no short cut solutions to these basic problems, a major onus seems to lie upon NGOs to bridge the digital divide by connecting the new information now made available to the voices of the unconnected.

Any new paradigm shift brings with it new risks. The dictum holds good for e-governance too. Some of the unmanaged risks could include misuse of private information bases like land records and demographic profiles, privacy and confidentiality issues arising from the lack of protection to personal identities of the citizens (for example, a potential to sell citizen profiles to corporates for focused marketing). Another unmana-ged risk is the potential for the emergence of new touts—kiosk operators who may overcharge, or middle-men in the procurement of IT hardware and software.

Participation and Responsiveness

The essence of a true democracy rests upon a healthy contestation of a plurality of views. One undisputed impact of the ICT revolution is the widening of the space for participation and contestation. Space and hierarchy have been virtually decimated by the Internet. This of course, has also meant that traditional power structures have been reoriented and the sarkar-janata relations are showing a shift from a provider-beneficiary mode to facilitator-participant one. How have governments in India responded to this opportunity/crisis?

Gyandoot and Lok Mitra have a facility for citizens to lodge their grievances and there is anecdotal evidence that complaints have been attended to by the authorities. However, these are sporadic successes. A quick study of the existing scenario reveals that states are by and large, not responsive. For example, though many of the key political figures, such as our ministers and MPs and Chief Ministers have published their email addresses, in reality, most do not respond to e-mails.

The Ministry of Agriculture has an interesting project that provides e-extension services through computer kiosks in some Indian states. The success of this endeavour in Ranga Reddy district in Andhra Pradesh is primarily due to the continuous flow of information from officials to women in the community and the responsiveness of the officials to the queries and feedback from communities. The officials use tools such as video-conferencing for regular communication with the project sites.

There are a few cases of citizen-led initiatives that have created the space for people to participate in the democratic process.

The 'Lok Satta' internet-based campaign aims to promote probity in the electoral processes. Such Internet based advocacy campaigns have the potential to persuade governments to respond.

It is only when citizens can engage with governments through the new spaces being made available to them can the notion of e-democracy begin to take birth. E-governance must allow for more than interaction. The shift towards e-democracy will be possible only if there is scope for representation-the stage where the space for consultations are legitimised and citizen voices are incorporated into policy formulation and operational modalities; and for influence-when the citizens are accorded right to litigate and directly impact on policy and praxis. However, the possibilities of ICT impacting on the direct representation process to influence policy, which some of the developed countries have been exploring through tools like e-referendums, seem to be quite far away in the Indian context.

The manner in which technology is influencing human development in India seems to be top-down, with elite users, who use the technology to share information and analysis guiding the mobilisation of public opinion nationally and internationally to change policy regimes. The more democratic face of the technology, evidenced in the use of technology by the disadvantaged and their participation of in the formulation and implementation of policies, is starkly absent.

Strategic Vision

As mentioned in the section analyzing the policy statements of the governments, it is critical that a deployment of IT for e-governance be guided by a well thought-out vision. While there would be several aspects of such a vision, three are highlighted.

Partnerships

Even as it is the responsibility of the government to further the development agenda through e-governance, government alone cannot ensure that ICT plays its designated role in development. There are several stake-holders, many times better positioned than the government to ensure the success of e-governance initiatives.

The government does need to play a key role in providing the basic socio-economic infrastructure, on which the superstructure of IT hardware, software and applications can be plugged by the other players. But it is the private sector that has valuable know-how. The Indian private sector has in fact, gained a leadership position across the globe and is well-positioned to use the expertise gathered to work with the government and further development goals.

NGOs also can bring in their perspectives in promoting equity, transparency and participation goals. They have played and do play a major role in development and have the knowledge, the experience and the grass-roots organisation required to induct ICT into existing projects and design projects aimed at utilizing ICT in innovative ways. International donors, with their long track record in supporting development activities, can use their international experiences for scaling up small experiments.

Thus, a range of domestic and international partnerships (public-private, government-CSOs, and private sector-CSOs) are both inevitable and necessary in the area.

The private sector has been playing a key role in many e-governance initiatives. The Governments of Madhya Pradesh and Kerala are talking to Gartner India Research and Advisory Services for consultancy. Gartner has been engaged by the

Andhra Pradesh Government for more than four years now as consultant and research provider. IBM India has been closely working are Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Gujarat, West Bengal, Pondicherry, Goa and Haryana. Last year IBM set up the 'IBM e-Government Centre' in Gurgaon, near New Delhi to offer technology, support and infrastructure to help governments and total service providers to design, develop, test and port proof-of-concept and prototypes of e-government applications.

Microsoft too has been working closely with the government, signing memoranda of understanding with some of them and helping in evolving a long-term technology blueprint for IT infrastructure.

An interesting example of an NGO-government partnership, is the RASI Maiyam initiative in Kanchipuram, Tamil Nadu, where FOOD, a Tamil Nadu based NGO has built and implemented the model. However, this is an exception and in terms of NGO involvement to bring in development perspectives into e-governance, governments across the board need to become more proactive.

In this discussion on the strategic place of partnerships, one significant dimension needs to be stressed. We have observed that there is a wide variation in the e-governance initiatives across state governments. Some are clearly ahead and have implemented several projects with varying degrees of success.

There is tremendous potential for cross- learning between the states. In fact, the bureaucratic structure could be leveraged for replicating successes in other states. Civil servants could be deputed from states like Andhra Pradesh and Karnataka to other states and states need not look only at the private sector for expertise. In fact, Andhra Pradesh has announced that it is ready to help out other state governments in implementing 'e-seva'. This government to government co-operation would enable the laggers to 'leap frog' ahead.

Choice of Technology Platforms

For many governments the world over, the choice of Open Source is a strategic one. This preference towards Open Source

platforms is firstly because, acquiring and upgrading proprietary software is expensive. There is also the proposition that it is safer to entrust knowledge in the public domain to Open Source, which is also in the public domain, than to proprietary platforms. Thirdly, using open source would enable India to encourage our own software professionals to provide software support in the form of add-on applications that could be written at a cost much smaller than that required to buy multi-featured packaged software. This would also decentralise software production, from the current paradigm of large transnational production of packaged software. While Madhya Pradesh, Maharashtra and Goa have preferred Linux software in their official IT programmes, states like Punjab and Rajasthan fully rely on Windows while even Karnataka and Andhra Pradesh and the central government continue to base their initiatives on the windows platform in addition to Linux.

Capacity-building

E-governance is not about software and hardware, but about people and processes. The early efforts of the Indian government to assign a computer to district headquarters was a major failure since there had been no strategy to address people's mindsets and reservations. More recently, in Jharkhand, top officials have been given laptops, but most are not put to envisaged use. Some say they preferred not to use it since they had not been given training.

Capacity-building is a pre-condition for the success of initiatives. A close assessment of initiatives like rural e-seva in West Godavari reflects the thought and effort invested in training self-help groups who run the e-seva kendrams.

For government departments, the shift towards using IT is actually an opportunity for building the morale of their staff. Capacity-building to train staff in using hardware and software can have the positive effect of boosting employee self-image and this is most likely to impact efficiency and productivity.

Despite its population, the success of its IT industry and the government's stated intent of wiring up villages, India lags in bandwidth necessary for info-access on the Net.

Rule of Law

Upholding the rule of law and provision of justice are fundamental aspects of governance. However, very few states have used IT to support these. Andhra Pradesh has an e-cops programme, which allows the law enforcers to communicate through a network and share information on crimes and criminals.

If crime and criminal records are computerised, these electronic repositories could support the easier tracking of crimes.

Another possibility in using IT in this regard is to use it to fight corruption, which vitiates norms of justice. The initiative for anti-corruption in India was led by Chief Vigilance Commissioner Mr. Vittal through the CVC website.

The website publishes the names of officers of IAS / IRS and other elite services against whom investigations have been ordered or penalties imposed for corruption. Apart from this, it also publishes a list of Chief Vigilance Officers from each Department who can be contacted to complain about corruption.

In conclusion

Hazarding judgments about relative performances of states based on the available information is a rather tricky business. In the Indian landscape, states like Andhra Pradesh, Karnataka and Madhya Pradesh seem to have more thought-out policies and many initiatives on the ground, but islands of innovation exist across the board. This needs to be sorted out fast.

The future is poised on how efforts can sustain momentum and meet the load of increasing expectations and demand; how governments are able to learn from each other and leapfrog; whether citizens, particularly the disadvantaged, can and will influence the face of e-governance and the role that civil society organisations will need to play towards this; and the huge challenge in upscaling successes. Worthy of mention here is the unexplored potential in the gizmos of a lesser god like cable TV, radio etc.

E-governance is not just the Internet as the common perception goes and governments need to move back in a certain

sense, to reappropriate the older communication tools like radio and cable TV. A critical mass of people is required to push e-governance to the next gear.

IT for Change

ITfC is a non-profit organisation in Bangalore, which supports the info-communications needs of other NGOs and undertakes research on the social dimensions of ICTs. The team is grateful for the information and perspectives in the 'India Country Paper' authored by Prof C.P. Chandrasekhar for the Regional Human Development Report, for UNDP.

Networked and e-Governance: Evolution of the word "networked" or "e-Governance" has to be viewed at the crossroad of two major shifts-governance and information revolution. The issue of "governance" has been around for a while. According to concise Oxford Dictionary (9th Edition), the word "governance" has been developed from a Greek word "*kuberna*" which means to steer. The first classic political science essays on the subject talked about the concept of "governability", which made the rule of law as the core to development.

An Awakening that came before the Technology: But the concept started to take an independent meaning with the interaction of three actors-state, market, and civil society in the post World War II period. Quarter century after the cold war, it was widely felt that market alone could not ensure the growth and state certainly had a role to play. In the West, John Maynard Keynes gave theoretical justification for the state to manipulate price signals and fight unemployment and business downswings. The socialist states installed and consolidated central planning systems. In the Third World, the state also reigned supreme as the planner, energizer, promoter, and director of the accelerated development effort. Therefore, states not only had to take a central role but also created its own enterprises. But dealing commercial entities with social objectives made it difficult to compete on equal terms in the economy. Therefore corruption, looses of enterprises became widespread. In many states where the taxation system was regressive, the losses were borne primarily by the poor. This led to a dissatisfaction and disillusionment of interventionist

policies and a demand for privatisation, which pushed the state away from its central role. However, the private sector by itself could not consider the distributional questions that led to the rethinking of development as economic growth in the first place. The inability of economic gains to produce acceptable levels of redistribution, poverty reduction and political freedoms woke up civil society.

Clearly "governance" gets into development discourse around the period of late 1980s. Human Development Report 1991 accepts the fact that freedom and democracy, though not a necessary condition, are entirely consistent with growth and development. "International development" shifted its focus from "economic growth" of the 50s (UN Development decades) to "sustainable human development" that includes concerns for people and nature to be widely accepted by state, market and civil society. The environmental movement has issued "governance" an urgency to deal the development agendas in a holistic manner: to include not only the sector at hand and the obvious stakeholders, but also others affected by them in other areas. It has forced a redefinition of the public interest with nature itself as a recognised stakeholder.

Globalisation has a bearing on the arguments of regulatory systems in a sense that theoretically governments had to create a level playing field for different actors so that there is a win-win situation. Idea is defined by "actors" and "institutions". Actors strive for maximum discretionary power, while the institutions regulate the behaviour of these actors. How far those regulatory exercises could continue to maintain that position or instead became and "intervention" that is a different debate, but the bottom line was this "interaction"-a concept that has been borrowed generously in the definition of networked governance.

Emergence of new information and communication technologies (ICTs), had a profound impact in the development of networked governance too. ICT replaced two basic elements of productions- "labour" and "capital" by "information" and "knowledge" for the first time in the last two centuries. Internet created the same break-through as the printing press did in

the 15th century. It shapes the ability to communicate, share, distribute, exchange, formalise, use, and network information at a speed that is not experienced before. Moore's law pointed out that, the processing power of microchips is doubling every 18 months with a trend of 20-30% decline in quality adjustment prices for computers. This means computers are getting cheaper, powerful, and ubiquitous, making the network and automation of services viable to government. Political activism on the other hand, is also using the space with increased number of public interest groups, community or voluntary organisations are propagating their demands and activities in the electronic network.

The Weberian principles of bureaucratic governance are being replaced with the trends of horizontal, linear, dynamic and networked governance. Administrative reform and development have experienced TQM (Total quality management) in the 1980s, and "re-engineering and re-inventing of Government" in the 1990s. Networked governance reflects this process of re-invention & re-engineering in governance of re-invention and re-engineering in governance and "is aimed at adapting administration to the further increasing flow of information: accelerating the process of decision making by optimising resources, and making the mechanism for decision making self-regulating". This led "Governance" to be defined independently from "the act of government" to the practice of getting the consent and cooperation of the governed. The concrete objective of this governance is to support and simplify governance for all parties-government, citizens, and businesses.

Some says, this networked mode of governance "uses electronic means to support and stimulate good governance". But what it means by "good" is a relative phenomenon and varies significantly in practice and reality. For example, Dr. Thomas F. Gordon of "e-Government Competence Centre" thinks it is the quality and efficiency of all phases of the life cycle of legislation that is reflected in correctness, consistency, transparency, and efficiency of transactions (of the government). While on the other hand, "UN report of Ad Hoc Expert Group Meeting on e-Governance and Changes in Administrative

Structures" suggests that networked governance is a move away from traditional bureaucratic government. But it may or may not promote good governance. "They can serve to reinforce, in a malignant or benign manner, existing inefficient and ineffective government practices or can introduce new "ways of doing business" that embrace private sector actors with little regard for the public interest."

The emergence of guides and principles of action for e-Governance: Both networked and e-governance are an emerging idea and are based on the rejection of bureaucratic governance that is not responsive to the imperatives of knowledge society, the realities of a more interconnected and complex world, the cross-disciplinary nature of policy today and the tools of ICT.

But the network is not just about a website and a digitisation of service delivery mechanism. It certainly stands on a greater definition of engagement and depth of relationship that surrounds both the citizens and the government. Difference of meaning in between governance and government is also important to this connection. Governance is the manner or the process to guide a society to best achieve its goals and interests, while government is the institution or the apparatus to perform that job. This means government is one (of many) instantiations of governance. Interestingly, different international bodies highlight the issue of governance as per their imminent interest and objective. The most commonly used term for them is "e-Governance".

For example, World Bank's concern on governance is exclusively related to the contribution they make to social and economic development by economic and structural liberalisation. Therefore, to them, e-Governance implies the use of ICT channels to change the way citizens and business interact with government to enable, citizen's involvement in decision making, increased access to information, more transparency, and civil society strengthening.

UNDP (United Nations Development Programme) relates the concept of governance to that of sustainable human development. It views e-Governance as a process of "creating

public value with the use of modern ICT". Public value is defined as a notion "rooted in people's preferences". e-Government is justified if it enhances the capacity of public administration to increase the supply of public value- the outcome of a high quality of life. Focusing more on the "governance" possibilities, it thinks e-Governance can "equip people for genuine participation in an inclusive political process that can produce well-informed public-consent, the ever more prevalent basis for the legitimacy of governments."

The UN's Five Guiding Principles on E-government Objectives are:

1. Building services around citizens choices.
2. Making government and its services more accessible.
3. Social inclusion.
4. Providing information responsibly.
5. Using IT and human resources effectively and efficiently.

The Public Administration (PUMA) Group of the Organisation for Economic Cooperation and Development (OECD) focuses on three main components of online and participatory e-Governance: "information, active participation and consultation".

The government of India took the basis of SMART for its vision statement on e-Governance. This relates to "application of IT to the process of government functioning to bring out Simple, Moral, Accountable, Responsive and Transparent governance (SMART)". This vision helped India outlining further objectives and strategic initiatives on e-Governance.

Rogers W'O Okot-Uma of Commonwealth Secretariat in London thinks that, e-Governance seeks to realize processes and structures for harnessing the potentialities of information and communication technologies at various levels of government and the public sector and beyond.

Anyway, networked government work through a network engine where policy is implemented through consultation, organisations do work as co-producers in policymaking and implementation process. But what is this network that is core to this governance?

The 1994 United Nations report provided an interesting response by bringing together, after Jones Hesterly and Borgatti, the various definitions of the concept of the network in the field of governance.

Jones, Hesterly, and Borgatti (1997) define networks as systematic interactions "among autonomous units engaged in creating products or services based on implicit and open-ended contracts" to adapt to environmental contingencies and to coordinate and safeguard exchanges.

Dubini and Aldrich (1993), and Kreiner and Schultz (1993) both describe networks as "patterns or collaboration among individuals and organisations".

Larson (1992) and Liebeskind, Oliver, Zucker, and Brewer (1996) emphasise longterm exchanges based on trust and mutual interests.

Powell (1990) adds that networks are based on "horizontal exchanges".

Grandori and Soda (1995) place an emphasis on "networks providing connections among relevant parties engaged in mutual exchanges."

Networked Governance and E-government

Networked governance has a conceptual similarity and distance to e-Governance-an issue that many analysts seem to confuse. Networked governance emphasizes on the sovereignty of units (in state) whose interconnections facilitate or inhibit the functioning of overall system. "e-Governance" as it is practiced in present day world, may or may not emphasise this sovereignty and may not primarily be focused on interaction. For example, e-government initiative may provide opportunity to download content developed by government agencies while networked governance put citizens together in interaction to allow learning, debating and participating on policy making topics. Practically that is the whole value of a network to work in governance.

Networked governance can represent one form of e-governance and may not embrace all advanced sorts of

technologies that e-governance uses. Some even ¬argue that the concept of networked government is entirely detached from information and communication technologies. For them, it rather looks like a reform of public administration, either supported by technology or not.

"e-Governance" doesn't deal with agreement or mutually agreed consensus or at least leaves the issues to be handled by the institutions. While in networked governance, objective is to find consensus in diversity. The attempt to develop "consensual knowledge" may favor the lowest common denominator as the eventual policy outcome. In addition, networks do not merely aggregate resources, but are structured to take advantage of the fact that each participating sector brings different resources to the discussion. But it is also true that reaching consensus may be a time consuming and expensive process, particularly in a conflict-ridden environment.

Many argue that the mission of e-Governance is to bring national, regional, and local administration closer to the common people. That means, government delivers services to the citizens, but there is less focus on how citizens will be engaged and make decision in the democratic process. "e-Governance" promises of wider interaction with citizens but when and how it would be done, that remain uncertain in the literature of e-Governance. In reality, government's focus is mostly on electronic delivery of services and may avoid the contentious issues of governance (such as, democracy, participation, equality, etc.). Some also thinks that the development of e-governance will inevitably lead to e-democracy. Clift believes that as Government delivers more services online there will be a dramatic shift in the willingness of citizens to use the various tools of e-democracy. But simply because Government engages in online activities with the citizen does not necessarily mean that mechanism for e-democracy will follow.

E-Governance where it refers to "*more engaged and interactive citizenry*", practically comes close to networked governance. But government or legislative bodies, usually being resistant to "change" can find it difficult to lead the transition. The commitment, attitudinal changes or the leadership that it

requires, foster a debate as to how government can handle this. The major obstacle governments will have to solve in order to meet this new challenge will be to develop administrative means and a sufficient back office, consisting of resources, funding, and personnel, to achieve this. Lack of political commitment, particularly where e-Governance does not serve political self-interests of the major stakeholders, can suffer a growth even though other success factors are present. While on the other hand, in a networked governance mode, state is one of many other organisations (that include, public and private sector, civil societies, etc.) and all these organisations act with considerable independence. The traditional role of state gets limited to a position of pursue or to a role of facilitator only.

If e-Governance or networked governance refers to greater engagement of citizen through digital means, then "digital divide" itself is an important area of concern. Causes to "digital divide" are not technical but socio-economical. Therefore there are questions of access, connectivity, education, skill, affordability, etc. that remain as underlying basics to e-Governance. UN World Public Sector Report 2003 (*E-Government at the Crossroads*) suggests three prerequisites to e-Governance: a minimum threshold level of technological infrastructure, human capital, and e-connectivity-for all. "*The primary challenge of e-government for development therefore, is how to accomplish this*"-says the report.

Both networked governance and e-Governance is a process not a decisive end to the evolution of its meaning. It also does not imply any standard trajectory of progression. Therefore countries need to find its own best way and need to be in a process of "*dialogue, learning, capacity building, and facilitation*" which is a "learning by doing" approach. Concept of networked governance is relatively new and more structured understanding is required to assess its dynamics. "*Some critics misunderstand networks as mere products of technocracy whereas others might naively regard multi-sectoral networks as the "one-size-fits-all" solution to all problems.*"

"e-Governance" that lays too much of its basis on ICT, often miss the point of governance in reality. As said by Richard

Heeks, "e-Governance" (electronic governance) may be unhelpful by suggesting, wrongly, that delivery of ICTs is an end in itself. It may be more ¬appropriate to talk of "i-Governance" (integrated governance or, perhaps, intelligent governance) that places governance objectives in the driving seat, with ICTs seen as one part of the means to deliver those objectives alongside people, processes and information.

"Market" dimension of e-Governance has a clear distinction to what the "political-economic" dimension of e-Governance is. World Bank for example, calls the governments "*to create the legal and institutional framework for transparency, predictability, and competence and the management of economic development.*" Argument is, market being the major equilibrium will eventually rectify the concerns of unequal distribution and the government's role is to provide that level playing field in the market by liberalizing economic and institutional framework. Examples are pointed to the diffusion of previous electronic media (such as, radio, television, etc.) and other forms of infrastructure such as, electricity distribution, sewage treatment, public education, telephone service, etc. that benefited the entire society.

While on the other hand, "political-economic" dimension of e-Governance relates the issue with sustainable human development that development cannot be a by-product or a trickling down of economic achievements only. Sound governance as UNDP says "*come to mean a framework of public management based on the rule of law, a fair and efficient system of justice, and broad popular involvement in the process of governing and being governed*". Therefore it is a totalistic view and wants to integrate organisational structures and activities of central, regional and local government, the parliament, the judiciary and the institutions, organisations and individuals that comprise civil society, the private sector and the ways all of their actions influence the public policy for public good.

From Governance to Multi-stakeholderism

Definitely, "*multi-stakeholderism*" or "*multi-sectoral network*" is a related term here. Multi-stakeholderism stems from the fact that state alone cannot deal issues of public

interest. Therefore a loosely regulated process, which is flexible and bottom-up and has minimal government oversight, can involve other groups (such as, private sector, civil society, NGOs, academician, etc.) with legitimate concern of common good and public interest. Actually different international bodies have already started to integrate "multistakeholderism" in their negotiation and diplomacy process. For example, the Geneva Declaration (on WSIS) has introduced "multistakeholderism" as a guiding principle for the WSIS process and this new form of interaction among different stakeholders will lead to more efficiency and to further innovations in the emerging new global diplomacy of the 21st century. Multi-sectoral network is most commonly used for networked governance. Multi-sectoral networks create bridges on a transnational scale among the public sector (national, regional or state, and local governments as well as inter-governmental groups), the private sector and civil society. They:

(a) Reflect the changing roles and relative importance among them;

(b) Pull diverse groups and resources together; and

(c) Address issues that no group can resolve by itself.

Networked democracy is also a relevant term. Douglas Rushkoff in his article Open source democracy: how online communication is changing offline politics gave an interesting explanation to networked democracy. He says, "The underlying order of apparently chaotic systems suggests that systems can behave in a fashion mutually beneficial to all members, even without a command hierarchy. The term scientists use to describe the natural self-organisation of a community is "emergence". The amazing organisation of an anthill "emerges" from the bottom up, in a collective demonstration of each ant's evolved instincts. In a sense, it is not organised at all since there is no central bureaucracy. The collective behaviour of the colony is an emergent phenomenon". He thinks the emergence of a networked culture, accompanied by media literacy and open discussion, can be a beginning of a more responsive political system. Heart to this political system would be a network engagement of citizens in public affairs. The author also thinks

that, the movement of "open source" software can be a model for the participatory process through which legislation might occur in a networked democracy.

E-Democracy on the other hand, focuses more on technological aspect of interaction. Steve Clift, a strategist on online democracy, describes e-democracy as referring to "how the Internet can be used to enhance our democratic processes and provide increased opportunities for individuals and communities to interact with government and for the government to seek input from the community". The International Tele-democracy Centre in Scotland focuses on the use of innovative ICTs to deliver improved democratic decision making processes thereby increasing citizen participation specifically through the use of electronic consultation and electronic petitions. Ake Gronlund from Umea University in Sweden is concerned that definitions of e-democracy often focus on ICT use and projects, rather than on democratic processes and institutional innovation. He argues that it should be assessed in terms of its defining processes, not to the extent ICTs are being used.

"Governance" is a term that goes beyond the collective meaning of some related concepts such as, state, society, government, market, bureaucracy etc. It includes the state, but also take into account the role of other actors of the society. If "e-Governance" is the initiator of this process, then "networked governance" has probably taken it at a level where organisations are not only connected but also are inter-dependent in making a cluster of policy making process.

Legal Issues

Information Technology Act specifies the procedure to be followed for sending and receiving electronic record and the time and place for dispatch in the receipt. This chapter contains sections 4 to 10.

Sec.4: Legal recognition of electronic records This section gives legal recognition to electronic records and provides that where any law requires that any information or matter should be in the type written or printed form, then such

requirement shall be deemed to be satisfied if it is in an electronic form.

Sec.5: Legal recognition of digital signatures This section relating to legal recognition of digital signatures, provides that where any law requires that information of document or other matter should be authenticated by means of digital signatures are affixed in such a manner as may be prescribed by the rules framed by the Central Government.

Sec.6: Use of electronic records and digital signatures in Government and its agencies. This section lays down the foundation of electronic governance. The filing of any form, application or other documents, creation, retention or preservation of records, issue or grant of any license or permit or receipt or payment in Government offices and its agencies may be done through the means of electronic form.

Sec.7: Retention of electronic records This section provides that where any law provides that documents, records or information shall be retained for any specified period, then that requirement shall be deemed to have been satisfied if the same is retained in the electronic form.

Sec.8: Publication of rule, regulation etc., in the Electronic Gazette. This section provides for the publication of rules, regulations and notification in the Electronic Gazette. Where any law requires the publication of any rule, regulation, order, bye-law, notification or any other matter should be published in the Official Gazette, then such requirement shall be satisfied if the same is published in an electronic form.

Sec.9: Section 6,7 and 8 not to confer right to insist document should be accepted in electronic form This section provides that the conditions stipulated in sections 6,7 and 8 shall confer any right to the public to insist that documents should be accepted in electronic form by any Ministry Department of the Central Government of the State Government.

Sec.10: Power to make rules by Central Government in respect of digital signature This section contains rules relating to digital signature. It provides that Central Government may by rules prescribe:

(a) The type of digital signature;
(b) The manner and format in which the digital signature will be affixed;
(c) The manner of procedure which facilitates identification of the person affixing the digital signature;
(d) Controls processes and procedures to ensure adequate integrity, security and confidentially of electronic records or payments; and
(e) Any other matter which is necessary to give legal effect to digital signatures.

The IT Act came into effect in the year 2000. The basic ethos of the act was to provide legal sanction to E-governance so that the country can move onto the 4th generation of the Digital Era. The framework may be in place but the procedures are not. E-governance demands amendment to the existing law. Amendments are to be needed at the central as well as the state level. In order to give the project a specific focus it would have to be financed under a separate budget head. This would enable mission critical linkages and avoid rework and duplication. Cyber laws should be available to the public as early as possible so that the IT System and information documents stored in the system will have the same legal validity as the documents stored today on paper.

Projects

E-Voting: Elected representatives have realised the need to be interactive over the net, at least during the election campaign. They could also inform there constituents in a cost effective manner about what they are doing in the Parliament or the Assembly, and also get to know about the happenings in the Constituencies. Thus the Internet offers an easy option for an elected representative to carry on communication with the electorate, in the language of their choice, even when he or she is out of the constituency.

India would have all electronic polls in 2004, using Electronic Voting Machines (EVM) and making photo identity cards mandatory. Programme would be written in C++. Voters would be provided with Smart Card which the can use to register

their votes. Equipments used are – PC, Frame Grabber/ Video grapher, camera, member keyboard, speakers, console, secretary's console and large display panels.

Electronic Pension Claim: E-governance has eased the procurement of pension amounts and ration cards, two important aspects of any rural life in India.

The portal will provide a single window for all relevant information and services in all government initiatives. Any one who wishes to avail the benefits of the project, has to go to the nearest STD/ISD kiosk. He has to submit the necessary documents to the kiosk owner who fills out the form online. The form reaches the Assistant Collector, the issuing authority in just a few minutes. The issuing authority deputes a circle officer to scrutinise the documents. In four days flat, the ration card or the old age pension sanction letter reaches the info kiosk owner, who in turn, hands it over to the applicant. PCO kiosk can provide information free of charge. Everything from submitting, processing and disposal is computerised.

Electronic Filing of Tax: Several administrative reforms in the country's tax regime are aimed at making it tax friendly. Income Tax Act is being amended to enable electronic filing of returns. It has also proposed direct crediting of all refunds to the bank account of the taxpayer through an electronic clearance system. Electronic filing of returns allows salary taxpayers to file their returns without having to come to the department. The tax administration has expanded the scope of taxpayer services by creation of an interactive voice response system and making software available to the public for filing income tax returns. The computer shall have a question and answer format. The E-filing of returns arouse those who have only salary income to approach a bank with their tax challans or form and proof of savings, who will then file their returns to income tax department electronically. However the assesses must have a Permanent Account Number (PAN) to avail of the facility. The equipments used are PC, Frame Grabber/Video grapher, camera, camcorder, laser printer, laminator, cutter and lighting fixtures.

The income tax department has selected six banks to work as designated intermediaries for the purpose. They are UTI

Bank, HDFC Bank, IDBI Bank, ICICI Bank, Bharat Overseas Bank and Indian Overseas Bank. These banks will transmit the returns electronically to the server of the income tax department. The banks will also provide a copy of the returns to the income tax payers. The banks will charge not more than Rs. 100 for each return. The decision to route electronic filing of returns through the designated intermediaries is because the most people do not have digital signatures as yet. Many banks are also in the process of obtaining their digital signatures.

E-governance market in India is gaining traction but there are challenges, which are stalling its progress. Despite the islands of excellence, E-governance has not been able to make rapid progress due to several operational, economic, personnel planning and implementation issues. E-governance in India has also focused heavily towards investing in hardware and very little on developing software and services, which could maximize hardware investments.

Meaningful e-governance in India is unlikely before 2010. India is in the picture due to slow response to cyber culture. When considering major social intervention for E-governance– developing social work practice, developing administration, and developing support communication all having a coordinating role. There is a general idea in the mind of bureaucrats that services should be at nominal rates. Selling up e-governance system in place will cost the government some money. This makes the service a bit more expensive than what it would cost by following normal procedure. Moreover there is general resistance from the bureaucrats for implementing E-governance initiatives; the main reason being it will put an end to bribe taking. The present E-governance dishes out information just one way about government policies with a lot of statistics. The recipient of information is not allowed to have a participatory role. Even the material provided is of outdated stuff clouded with bureaucratic jargons. In most states e-governance relies on private participation. Hence some government employees feel that E-governance would deprive them of power and status. They allege that this is nothing but handing over some of the functions of the government to the private sector. They also

fear that this may reduce government jobs. So they are reluctant to take to e-governance.

The transition from governance to e-governance takes place beginning with a 'presence' phase followed by 'interaction', 'transaction', and 'transformation' phase. Unfortunately it believes that India is still in the earlier phase of its transition. Flexible demographic and geographic competition will eventually propel E-governance to prominence in India though the constraints are significant enough to stymie any immediate advances.

So what is e-Governance? E-governance is the computerisation and automation of common government processes with the goal of lowering costs, improving efficiency and generally providing better services to citizens.

Linux has found a new powerful ally in politicians who have made e-governance the new mantra for governments globally. Politicians, primarily are interested in Linux and open source in general due to the core business value and benefits provided by Linux over and above alternative operating systems. In a general sense, Linux provides improved IT security in the increasingly security conscious world post-9/11 and greater interoperability via open standards in an ever more integrated global society. Put another way, Linux provides a safe and secure environment while supporting the benefits of openness and interoperability.

Delixus, Inc. recently completed work on the Delixus e-Governance Platform 2004 edition that leverages the strengths of Linux to provide improved services to widows, pensioners and poor farmers in the Indian state of Karnataka. The Delixus e-Governance Platform addresses the needs of millions of rural poor citizens in India who receive widow or pension checks through services provided by local government offices.

For several reasons, the current manual system is slow in getting checks to the people who desperately need the money. First, long distances often exist between the pension offices and the villages where people live. Second, cross-referencing multiple files for a single citizen often takes weeks due to the

large volume of applicants. Third, citizens often are unaware when checks are ready for pickup.

Requirements: e-Governance applications must deliver tangible benefits to citizens in terms of lower costs, more rapid delivery of services or new, innovative services previously unavailable. Put another way, the primary requirement of e-Governance is it must improve the lives of citizens.

All software application development begins with the definition of technical requirements, such as data storage requirements, performance requirements in terms of I/O and throughput, as well as scalability and application uptime. Although any experienced software professional is an expert in technical requirements, the automation of governance in India and China in particular are uncovering issues on a scale never see before. For example, defining the upgrade path for an application that must scale to a total of over 1 billion total users with a capacity for 100 million concurrent connections is not easy. What are the bandwidth, storage capacity and performance requirements that will enable an application of this scale to provide consistent and usable services to citizens? These are the exact issues facing the governments of India and China and technology vendors as they look to implement e-Governance.

Laws and Regulations: e-Governance applications must adhere to the laws and regulations of the government body using the application. Many of the laws and regulations were created long before the information age and therefore may not define clearly what is acceptable in an automated government office. As a result, frequent and direct communication with government officers is required to seek clarification during the development process. Lawyers become an integral part of the software development process due to the need to understand the vast ocean of laws and regulations that have the potential to make or break the marketability of an e-Governance application. e-Governance is one of the few applications where software engineers and lawyers sit side-by-side reviewing a software requirements specification (SRS) for technical accuracy, albeit with different ideas about what is technically correct.

Language Support: Multilingual environments create new challenges and opportunities. There are multiple national languages in India, but more importantly numerous regional languages are mandated by state governments. Despite the existence of national languages, state governments dictate that regional languages must be used for all government communication within state and local departments. The Kannada language is mandated for all state and local government bodies within the state of Karnataka. Karnataka is home to Bangalore, which, along with Silicon Valley, is of the two largest software development centres in the world.

Kannada language support was a critical legal and technical requirement for the Delixus e-Governance Platform. Detailed research and testing on Kannada language support in both Linux and Windows was undertaken. Importantly, the desktop operating system (OS) selected had to support Kannada for the Delixus e-Governance Platform as well as all other business applications.

The difficulty in adding Kannada support to software is that Kannada uses an entirely different font from English, the keyboard layout must be remapped and there is a lack of presentation standards. Importantly, Linux has strong support for Unicode in programming languages, databases and middleware. Unicode is a standard encoding system that provides support for many different languages and character sets, including Kannada. Unicode is widely supported in open-source applications and by such industry leaders as IBM, Sun, Microsoft and many others.

The PostgreSQL database server and the Postfix e-mail server add Kannada support to Linux through Unicode. In a general sense, Unicode enables Linux to provide the processing power behind a Kannada-based application.

The Business Case for Linux: Linux was selected as the technology of choice for the Delixus e-Governance Platform as it best satisfied technical and legal requirements. More specifically, Linux servers provided an optimal level of security and cost effectiveness, as well as supported the language requirements. Support for open standards enabled Linux to

serve an interoperable e-Governance application that is accessible from Linux, Windows and other desktop operating systems.

The benefits of Linux had to be expressed from two different viewpoints. First, the benefits to government operations and second the benefits to widows, pensioners and farmers. Government operations had to improve by:

- Lowering the cost of operations.
- Providing scalability for future growth.
- Following open standards for interoperability with other applications.
- Providing a robust and stable system to support ongoing government operations.
- Simplifying system maintenance and management.

Much has been made of which OS has a lower total cost of ownership (TCO), Linux or Windows. However one views the argument over TCO, many governments appear to be weighing in with their opinion that Linux is the right solution in terms of cost, performance and security. Proof of this lies in the moves by the Texas, Canadian and Chinese governments. Numerous other governments have made similar moves to Linux and open-source software.

A major business value provided by Linux to governments is freedom from outside influence by a foreign corporation, namely Microsoft. Linux provides governments with the freedom to change vendors as needed, the freedom to audit code for spyware and support for open data formats that are accessible to lower income citizens who cannot afford the expense of proprietary software. Protection against spyware is vital in security conscious government departments.

Open SSH provides a secure method for system administrators to instantly access and manage the Linux servers located in the most remote of local government offices. Open SSH is an open-source implementation of the SSH protocol that enables system administrators to log on securely to a remote Linux server over the Internet. The speed with which an administrator could access and repair each office's Linux server

greatly reduced system maintenance expenses and improved system uptime.

The lives of citizens had to improve by:

- Reducing the time between submitting an application and picking up a check.
- Enabling citizens to remotely check on the status of their applications.
- Notifying applicants when their checks were ready for pickup.

Shortening the time required to process applications is a central benefit of the Delixus e-Governance Platform. The old manual process required government officials to locate large numbers of files for each applicant. The vast number of applicants made the process of locating each applicant's files time consuming. The Delixus e-Governance Platform reduced the search time for an applicant's files from weeks to a few seconds. A simple search of an applicant by name instantly provides the government official with immediate access to all of an applicant's files.

A Web-based interface provides the ability to remotely check on application status from any Internet-connected computer. As a result, widows, pensioners and farmers easily can check the status of their applications from any Internet cafe. Automated e-mail notifications are sent to field officers upon the approval of an application. Field officers then can notify the applicant that his or her check is ready for pickup.

Delixus e-Governance Platform

The Delixus e-Governance Platform leverages the strengths of Linux to improve the lives of Indian citizens through more timely access to information and to their pension checks. Linux servers located in each local government office power the e-Governance application and provide a robust decentralised processing model. The use of separate Linux servers in each office removes the risk of having a single point of failure that would cripple government operations. Importantly, the decision to put a separate server in each office was cost justified through the use of low cost open-source software.

The servers at each local government office are designed to communicate with a central computer at the state government offices. Communication and internetworking with the state-level computers is facilitated through the use of open-source applications that support open standards. Specifically, the Postgre SQL database server, the Apache Web server and the Postfix e-mail server easily integrate with other open-source software, commercial software and one another.

The Delixus e-Governance Platform uses a Web-based user interface to allow applicants to access the e-Governance application from any Internet cafe. In addition, the same interface is fully accessible by government officers who access the application from their internal network. The Web-based interface provides a unified and consistent user interface that can be accessed from any Web browser that supports Kannada, including Linux and legacy Windows desktops.

Looking Forward

Linux provides true business value to governments through lower costs and better information security as well as proven interoperability through adherence to open standards. However, increased language support is required to increase Linux usage in many government agencies throughout the world. Some government agencies, such as the Israeli Ministry of Finance, have taken a proactive approach and enlisted the help of Sun Microsystems and IBM to add Hebrew support to OpenOffice.org.

Additional attention should be paid to simplifying the steps to add additional language support to the various Linux applications in order to further advance Linux adoption by government agencies. Finally, improved documentation will provide the needed boost to the many open-source supporters itching for a chance to add their favorite language to the many already supported by Linux.

E-Government vs. E-Governance: "Government's foremost job is to focus society on achieving the public interest." "Governance" is a way of describing the links between government and its broader environment–political, social, administrative."

There have been some suggestions in different jurisdictions in Canada and other countries recommending that the definitions we are seeing emerge as a result of the applications of Information and Communications Technologies in Government (ICTs), and the way the terms are being described, that is e-government, e-governance and e-democracy, should no longer be used, nor should definitions for these new constructs be attempted. This approach is subject to debate and exploration rather than outright rejection of any definitions. A case can be made that it is through the development of terminology that a subject matter can be evolved.

Putting the "e" on services, such as e-health, e-participation, e-voting, e-environment or e-weather, for example, serves as a guide to the wider subject matter of e-government and e-governance, that can, in time, be imprinted on the public mind. More importantly, the use of terms such as e-government, e-governance and e-democracy, leads to the creation of an identifiable discipline. This then widens the development of the subject beyond the parameters of simply government boundaries to the larger spheres of civil society, associations, unions, the business community, international organisations and the academic world.

A moving away from definitions of what government is doing in the "e" world only leads to a lessening of accountability of the activities in which any government is engaged. In society, it is the identifying of concepts through words and phrases that leads to cohesion and order. Subject matters create an ambience between stakeholders throughout the society. For example, "public transportation" or "environmental" issues are phrases understood by citizens who then relate them in their minds to the mass movements of our times. This is the way e-government must go. To move away from this identification that has been communicated through government websites, at the political level and in the media, can only lead to confusion.

Attempts to redefine e-government, e-governance and e-democracy, would only create a disservice to the public. We need to keep the current framework so that society knows the goal that government is trying to achieve. In time, technologies

will change the way society shapes itself and this will lead to a widening of this subject matter into new spheres. At that point a new nomenclature will arise reflecting the change articulated in future generations. But this new nomenclature will only be an extension of the discipline that began to evolve in the late twentieth century. The danger in this time of modernity is the urge to move with the latest "craze" or "fad". It is the job of governments to maintain stability at times of great change in which we are now living. Part of this stability is being forward thinking while keeping rooted in acceptable principles and processes.

Government, governance and democracy have been with us for a long while. By adding the "e" to these words we maintain a stream of thought and a conceptual framework with which the public can relate. Governments are not in the business of creating fads.

For these reasons, this paper seeks to explore the concepts of e-government and e-governance and to separate out how these two terms differ and how workable they are in our new digital environments. As will be seen in this paper many international organisations have come to accept these terms, and they, and other respected thinkers and authors, are contributing to this important process of change.

This paper looks at the nature of government and governance. Particular focus, and much of the paper, is devoted to how one approaches these terms in the context of public administration. The paper then ties them together in the context of the emerging "e" environments. The purpose here is to create clarity in relation to these terms precisely because e-government and e-governance have been used so interchangeably. Such clarity could lead to a greater depth of exploration of the subject matter and assist in the development of the internal process of government, and the impacts these processes and subsequent delivery mechanisms are having on individual citizens and groups overall (governance).

E-democracy and online consultations are dealt with in the last part of this paper, as e-democracy is actually the natural extension of e-governance. In pre-Internet times interactions

between governments and targeted institutions, groups and society were an important part of policy development. Now, with these new tools, more citizens and stakeholders can be embraced into the process. However, as will be explored in the final Report of this series, this is not going to be an easy progression and many changes (in both the government and society at large) will need to occur before any major engagements take place.

The Canadian governments, at the federal and provincial levels, are making tentative first steps. Research of the activities of our governments and many others around the world, and of international organisations, shows that much is to be done to move into this new form of governance. Governments on the whole are aware of the changing expectations of their citizenry, and the desire by especially not for profit groups, and emerging e-democracy groups, to have a say in the evolution of government policy. This is a serious governance issue that many governments are now facing. How governments deal with this could very well determine future relationships between government and the citizenry.

This paper is an exploration of the issues and a contribution to the growing debate on the future of e-governance.

The terms "government" and "governance" are currently in widespread use, sometimes interchangeably. It is important to develop a distinction between the two. Thus, this paper will explore both the overlap as well as the conceptual distinctions that these two concepts embody, because there are different implications for electronic versions of each.

Conceptual Clarification: Professor Donald F. Kettl's recent book, *The Transformation of Governance*, on the historical analysis of American public administration provides some good discussion on government and governance. Government is an institutional superstructure that society uses to translate politics into policies and legislation. Governance is the outcome of the interaction of government, the public service, and citizens throughout the political process, policy development, program design, and service delivery.

Framing the Comparison: Governments are specialised

institutions that contribute to governance. 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. This paper will focus on the distinction between government and governance, particularly as manifest in e-government and e-governance.

Electronic Networks: The spread of electronic mail and the World Wide Web has been quite dramatic over the last decade. E-mail allows instantaneous global communications for anyone with a connection to the Internet. E-mail has been the killer application of this decade but the rapid growth of spams in the last few years is creating administrative headaches for public and private sector organisations alike. There are numerous technological solutions for e-mail spam. However, many governments are also considering legislation to stem the proliferation of messages flooding all our e-mail boxes. Spam is currently an important governance issue as it does effect the way public can answer back to government agencies and departments.

The World Wide Web enables global document and image distribution, again for anyone with a connection to the Internet.

Before widespread use of either e-mail or the Internet, Christopher Hood developed a model of government (in his book Tools of Government published in 1983) that demonstrated that most government work actually consisted of information processing. Not surprisingly then, governments have taken to electronic networks in a big way, proclaiming better service delivery, and continuing cost declines as their rationale.

Political activism has also moved onto the Internet, as public interest groups, community organisations, voluntary organisations, and special interest groups use the electronic network to propagate their messages and help coordinate their activities. These endeavours are also largely information-based, and are now being described as "community informatics" by Michael Gursteiniv. The use of the Internet by thousands of individuals and groups around the world for political activism and a tool to influence the electoral system and government

policy has become an important part of the e-democracy equation.

The Characteristics of Government: The institution of government involves a narrower range of considerations than the wider functions of governance. What follows is an elaboration on the six characteristics of government.

Superstructure: The concept of a superstructure comes from mechanical engineering and refers to the structural skeleton of a building or a ship. The term was borrowed by 19th century political economists to serve as a metaphor for the institutional framework of society. Their use of this metaphor was meant to convey the concepts of dominance, orderliness, and permanence. The public acceptance of these concepts helps governments to rule.

Governments are formally constituted, and are situated at the top of the political food-chain. They are bureaucratically organised, and usually constitutionally legitimated. Sociologist Max Weber proposed that this constitutional legitimation gave governments a monopoly in terms of societal control. Most social scientists agree, but the veracity of this observation is questionable, though it is self-evident that society cannot operate without governments.

What being at the top of the political food-chain means for governments is that they serve as both the highest forum for policy making within their jurisdictions, and as the final court of appeal within their jurisdictions for dissenters to those policies. Most of the work of governments however consists of actually implementing policies through programs that deliver services.

As the social infrastructure has grown increasingly complex and risky throughout the modern era, governments have adopted more and more responsibilities. Systems for public health, environmental management, transportation regulation, telecommunications planning, and social services have all been put in place. Both operational standards and conflicts of interest have required that the governmental superstructure actually be consolidated to enable program effectiveness.

The government's position of societal superstructure creates an ironic dilemma for it. On the one hand, technical requirements for regulation are obvious to those who participate in operating any part of the social infrastructure. For example, this ranges all the way from the presence of traffic rules to the need for planning of transportation system upgrading and expansion.

However, individuals and groups within society evaluate governmental compliance requirements in terms of their own situations (i.e., their own particular needs and wants). The reason politics has been defined as "the art of compromise" is that governments often face the need to resolve discrepancies between people's desires to achieve their own ends and infrastructure requirements for operational effectiveness.

Decisions: United States President Harry Truman's maxim that "The buck stops here" summarised quite nicely the point that governments must take decisions to authorise actions. There are a multitude of situations that require government decisions, and a variety of types of decisions that governments can render. Both the longevity and the implications of government decisions have become progressively less certain as the aforementioned uncertainty and risk in society have grown.

National decisions will involve policies and/or programs that have society-wide impacts. In these cases the possibility of regional differences may require that negotiations be undertaken with local governments or groups so that program delivery can be customised to different circumstances. International decisions, either bilateral or multilateral, may require even more perseverance and diplomacy than those that are confined to a government's national sovereignty.

Decisions that are confined to a particular policy, program, department, region, or group, will usually be easier to frame, negotiate, and finalise. To the extent that considerations are more narrowly circumscribed, the issues, the implications, and the consequences will likely also be more manageable. The caveat to this judgment is "all things being equal". Unfortunately the unexpected can occur, when a previously insignificant occurrence suddenly acquires disproportionate importance "out

of the blue", often because of a change in its political salience. Even for these situations there are now coping skills.

Joint decisions that need to be agreed between various levels of jurisdiction (i.e., national, regional, municipal, etc.) can also be particularly tricky to arrive at. Different levels of government usually guard their assigned powers and responsibilities, and are often concerned that joint decisions will be treated by other governments as an excuse or opportunity to encroach on the rightful domains of their negotiating partners. If however, a government is for any reason reluctant to take a decision it knows is necessary, it may be more than willing to use a joint agreement.

Partnerships between governments and other individuals or groups in civil society, are the newest version of collaborative decisions. Governments may lack the money, personnel, or expertise to implement decisions they desire, or they may face constitutional limits regarding what they can impose without the consent of the governed.

These kinds of government decisions are becoming the fastest-growing type in today's policy environment. Examples of input from outside government are these Reports, which look at the information policy aspects of e-government. These studies present intellectual content that could assist in e-government policy and program development.

Rules: The quintessential feature by which the sociologist Max Weber characterised government bureaucracy, was the existence of formal rules for all procedures. For Weber, the development of these rules was the hallmark of modernity. Prior to the modern era, governments had been organised either on the basis of traditional deference, or a leader's charismatic persuasiveness. These alternatives may have served their purposes in their times, but both were arbitrary and unreliable in the modern environment that required rationality.

Although some bureaucratic rules have recently been subject to reconsideration, most of the major rules remain in place. An important section of these rules concerns personnel staffing, that is to say:

(1) recruitment,
(2) hiring,
(3) promotion,
(4) discipline, and
(5) firing

To overcome nepotism and favouritism, these five procedures were given rules based on credentials and performance. The result is that over the years governments were staffed with far more qualified people than before these type of rules came into effect. Better qualified staff however, has not always produced better policies.

A more recent rule is that requiring "evidence-based policy-making". This is actually just contemporary wording for an older rule, namely that "good reasons" had to be given for decisions. As often as not though, the previous "good reasons" were either ideological (the 'public services' ethnic, or economic, or religious beliefs), or political (the opinions of organisational superiors, elected members, special interests, etc.). Now that the mass media reports on government shortcomings more readily, (and more often erroneously and in sensationalist terms with hidden agendas attached) attempts are being made to forward policies with the "evidence" that real needs exist requiring appropriate government actions.

Another important section of government rules concerns provisions to limit partisan political interference in program design and delivery. The audiences for which government programs are properly intended are categories of persons, not the favouring or disfavouring of specific individuals. Since there have been repeated violation of these rules when the opportunity appears to arise to do so undetected, a series of ever more stringent protocols have been put in place to limit these possibilities. There is less patronage and interference as a result, although some critics still claim corruption.

Rules that are the bane of every bureaucrat's existence are those for assessment and evaluation. What things are done, what things are not permitted, how things are done, how things are not to be done, when things can or cannot be done, where

things can or cannot be done, even why things can or cannot be done, are all subject to assessment (estimation of consequences) and evaluation (estimation of effectiveness). Actions that are harmless or even acceptable in some respects may be unacceptable in general because of contravention of some narrow rule. This is undoubtedly the source of the accusation that governments are "hide-bound".

When Weber outlined his theory of rule-governed bureaucracy, the situation he depicted seemed relatively straightforward–rules were established to govern organisational behaviour, and it was the duty of public servants to obey them. After almost a century of working under and reflecting upon this theory however, we now know better. As rules have proliferated so has the possibility of conflicts between rules. Judgment is required on which rule (or rules) apply in a situation, and how strictly to abide by their provisions. People can either "hide behind the rules" or use them to innovate – and they do.

Roles: One of Weber's meta-rules was that the powers and prerogatives of bureaucratic office were attached to the role in the organisation, not to the person occupying the position. The rationale for this seemed obvious when Weber explained it (organisational procedures should be impersonal to avoid favouritism), but in practice it has turned out to be much harder to actually ensure. Initially the preference for the "personal touch" was attributed to the persistence of traditional or charismatic attitudes.

Not until the third generation of organisational studies did social scientists realise that any initiative taken by anyone within the bureaucracy still required the exercise of some display of leadership, whether limited or extensive. But once the quality of leadership surfaces, the personal component becomes as important as the professional component. The sociologist Max Weber must now be re-interpreted to mean that leadership action should not be based exclusively or predominantly on personality, but should rather blend professional competence and personal attributes to the extent needed to ensure followership.

This complicates the rule of roles considerably. When candidates are being considered for recruitment, hiring, evaluation, or promotion, what is the appropriate trade-off between personal qualities and professional qualifications? What if a less professionally qualified candidate with a better personal touch inspires better performance from his or her colleagues than a more qualified but less personable candidate? Urban legends allude to this dilemma quite frequently. Nevertheless, personnel management within the public sector still does not always formally recognise any such problem.

Another irony of the roles rule is that many candidates who are recruited on the basis of specific credentials and expertise are subsequently not assigned work that matches their qualifications. In the days of empire, the British public service was notorious for the view that a university graduate with whatever degree was a good candidate for any assignment, regardless of task requirements. The theory was that a degree was really a certificate in flexible thinking, so the appointed persons could simply manage their groups and assign technical tasks to subordinates (an eminently "civilised" arrangement).

Now that knowledge workers are expected to master multi-tasking, governments seem to be trying to re-invent the "special generalist" (or is it the "general specialist"?). Once again however, newly acquired knowledge about the psychology of work shows why this "one size does all" approach is short-sighted. Effective work at particular tasks requires a rhythm of both schedule and duration– there is a certain "concentration" needed to do a good job. Lack of concentration can result in both poor performance and increased burnout.

The new focus of roles in government work is on teams. Permanent assignments are being replaced by temporary teams with a mission that begins and ends within a particular timeframe. Effective teams are composed of those with both complementary skills and personalities. There are now templates for effective team-building, and they are being used in governments as well as elsewhere. This approach has gained currency as emphasis has shifted from on-going programs to new implementations.

Implementation: Many proposals within governments have simply gathered dust on the shelf rather than becoming the basis for programs or services. Auditors often find examples of this situation and criticise the practice as a waste of money. When posteriori evaluations are conducted the reasons most often cited are either "lack of political will" or "lack of sufficient resources".

In Systems Analysis a methodological rule has developed concerning project completion that could just as fruitfully be applied to Policy Analysis: *Every solution must include a migration path* (how to get from here to there). The rule of thumb is that any solution without a migration path is no solution at all. One of the hallmarks of a quality solution is the identification of a number of alternate paths for the necessary migration.

In Policy Analysis the "migration path" is the implementation plan. If policies or programs are designed well, they can usually be implemented in whole or in part, in multiple phases or a single push, by an internal team or in partnership with those from different parts of government, other governments, or outside of government. These various possibilities are the source of alternate implementation plans, but no plan at all can lead to the charge that governments are ineffective organisations.

The major challenge that governments have with implementation is the risk of project failure and/or cost overruns. Since governments are publicly accountable for their choices, their main performance criterion is dependability. In response to this concern governments have recently developed Risk Management tools consisting of risk assessment check-lists and risk insurance provisions. In some cases however, the result has been to make government decision-makers even more cautious and less innovative.

In this respect, one "lesson learned" which is now almost universally adopted is to avoid "big-bang" implementations. Trying to implement a change, especially a large one, all at once, is far too risky, given some spectacular failures now on record. Instead preference is given to the development of

prototypes, pilot projects, and demonstration projects. This seems far more sensible given the dependability criterion, because the impact of mistakes can be limited in their scope, and improvements can be adopted as experience is gained.

Outputs: Because program evaluation is one of the major concerns of government activity, focus has steadily shifted to measures of output to gauge both efficiency and productivity. There are a variety of outputs that governments measure. One is case-load: the number of assignments per person, the length of time to completion, and the type of results produced, are standard types of measures. This is a version of labour productivity.

In what is now being touted as the "knowledge" driven society, in which the "knowledge worker" is paramount, it is important to put this new paradigm into a conceptual framework. Since most government outputs consist of knowledge work, equipment use is another output measure. Use of a desk-top or mainframe computer, types of software applications applied to an assignment, duration of computer use, and the kind of data transformation produced, are all logged. This is a version of equipment productivity, whereby an assessment can be made as to whether or not adequate technology is in use, and if it is being used competently.

Wider measures include the size of the staff, personnel turnover, the average duration of assignments, the ratio of supervisors to workers, and the aggregate rate of assignment completion. All of these measures give an indication of the rate of activity, so that comparisons can be done between similar workers or similar units. Pay scales and promotion prospects are often designed to reward improvements in these rates.

What is much more difficult to record, measure, or evaluate is the effectiveness of the government employees' activities. Part of the problem centres on what measures of effectiveness are appropriate. Should the major emphasis be on inputs, that is to say, size of staff, qualifications of staff, salaries paid, and equipment available? Or should the focus be on throughputs, which include hours worked, supervision needed, equipment used, and supplies consumed? Then again, perhaps outputs

themselves are the best measures, such as tasks accomplished, cases completed, decisions taken, and actions initiated. There are rationales for, and defenders of each of these alternatives, and what one measures determines the results one gets.

What experience has demonstrated is that the only method of measurement which does consistently produce improvement is that which assesses the entire value-chain within the organisation, from inputs, including throughputs, to outputs. Although efficiencies can be gained for particular activities, many of these have already been achieved. The most room for improvement now is with the flow of tasks and assignments between people. The rate of output from groups has previously been slowed by poor transfer procedures between those collaborating on an assignment. As we will see below, e-government addresses this situation.

The Characteristics of Governance: The function of governance involves a broader range of considerations than the structures of government. What follows is an elaboration of the six characteristics of governance from the above table.

Functionality: As Kettl has observed, "Governance" is a way of describing the links between government and its broader environment – political, social, and administrative. Each of these dimensions forms a side of the "governance triangle". All of the other characteristics of governance are just aspects of its functionality, which we will preview in this section, and then elaborate in more detail in further sections. The concept of functionality, as R.A.W. Rhodes has stated it in "Understanding Governance", refers to the effects that are produced as a result of the procedures used. The function of social governance is to direct the achievement of collective objectives.

Governance is distinct from government in that it concerns longer-term processes rather than immediate decisions. Governance is a set of continuous processes that usually evolve slowly with use rather than change dramatically (as with a change of government). There are three categories of processes to cover the interactions between the government, the public service, and the citizenry. The engagement process covers the

interaction between citizens and government; the consultation process covers the interaction between public servants and citizens; and the implementation process covers the interaction between the government and the public service.

The result of the governance focus on processes instead of decisions is that the primary concern is goals rather than rules. In the perspective of governance what is important is the objective rather than the rules of behaviour for achieving it. Various levels or locales of jurisdiction may pursue the same goals with distinct instruments, different priorities, and alternate agendas. This is often both unsurprising and inevitable– even those "singing from the same hymn-book" may do so in a different key, to a different accompanying instrument. The goals of governance cannot really be achieved by micro-management, because there are no means of detailed enforcement.

In contra-distinction to the formal roles within government, governance processes are oriented to performance. Specific tasks are not necessarily assigned to specific roles because the point is for everyone to "pitch in" and work toward the common goal. The main concern is the purpose of the various governance processes, and numerous people in various roles can provide an assortment of contributions depending on their circumstances.

Governance takes the larger view of social objectives, so it involves the coordination of efforts rather than the implementation of specific programs. How it all fits together is more important than exactly who does what to whom by which means. This is the systemic perspective as opposed to a focus on the individual practice, or player, or process.

The "bottom line" for governance is outcomes rather than the outputs of government. One dramatic 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" are hoping that those in government will adopt a new focus on outcomes to replace outputs.

Processes: Some experts and writers contend that many knowledge workers within governments are resistant to assignments to "manage processes" rather than to deal with "substantive issues". But since government is not a single-issue or a single-instance exercise, on-going processes are what governance is all about. What the source of the aversion seems to be is that the processes are often standardized in such a routinised way that they become exceedingly boring very quickly.

This kind of habituation is not necessary for governance to be effective – it arises instead from an inappropriate way to try and ensure compliance to centralised control. The consequence however, is that flexibility is slowly squeezed out of governing processes as rules are proliferated to cover more and more eventualities. The assumption is that this will protect those in positions of responsibility from being held accountable (and punishable) for anything that can be construed as politically discreditable.

This is where the concept of governance could provide some positive guidance to the institutions of government. If governing processes were directed by flexible guidelines rather than minute rules, and if those on the front line were permitted to respond to unforeseeable particulars in a creative way, the larger aim of policy and program improvement may be more favourably achieved. To anticipate a little, the rationale for governing processes would be better to emphasise outcomes over outputs, even within government.

The Engagement Process consists of citizens and interest groups interacting with government representatives. Elections are one example of this, and lobbying legislators is another. More recently there have been increased attempts to engage citizens in a policy dialogue with government members on specific issues (i.e., proposals for new laws, or policy frameworks, etc.). In these attempts there have been some encouraging successes, and some discouraging failures. One lesson learned from all of these experiences is that a "free-for-all" approach

will not work – effective citizen engagement requires that the process be managed to maintain focus and momentum.

The Implementation Process concerns the transformation of laws and policies into procedures and programs. In terms of governance, the two major concerns are efficiency and effectiveness. Organisational process re-engineering could automate much of this work, and reduce the personnel requirements considerably. What would be needed however, would be more reliance on electronic methods.

The Consultation Process involves direct contact between the public service, and citizens and interest groups. In the case of interest groups, they have sought and gained access to bureaucrats for decades. What is changing is that individual citizens and community groups are now beginning to obtain similar access even if in limited numbers at this point in time. By no means are all citizens interested in exercising this opportunity, nor are all government agencies interested in extending it, but the General Accounting Office of the United States government has found that acceptance of this change on both sides is on the rise. This process helps citizens to actually shape regulations, in a small way. As will be seen in sections below, and in the Final Report of this series, results are very limited to date. The process of on-line consultations is very much a top-down process controlled by public sector organisations.

Goals: Because governance focuses on goals rather than rules it does not mean that the situation is any easier to understand or deal with. Goals are often based on values, and in today's diverse society, value consensus can be difficult to find or build. Instead, just as there are conflicts of values, so there are conflicts of goals. Nobel Prize winning economist Kenneth Arrow's famous theorem showed that there is no rational way to calculate majority support amongst conflicting goals and groups.

Policy analysts and media commentators often refer to a mythological political entity called "Public Opinion" to build or demolish arguments, but citizens' views are far more likely to be distributed across a variety of dimensions such that grouping

would bring together completely different people on disparate issues. People can be economic liberals, cultural radicals, and religious traditionalists, or any other combination, all at once. Nevertheless, those who want to shape social goals must be prepared to commit the time and effort in governance processes.

Participating in governance to shape social goals can be very time-consuming. One of the reasons more people do not do it is that they have jobs, families, and leisure activities, all of which usually take priority. One of the reasons interest groups do sustain their efforts to shape social goals is that they select those issues and policy areas where their interests are directly involved. Whether their objectives are economic, cultural, ideological or personal, citizens who do engage themselves regard it as worth their while to "sit at the table" and to persist in their efforts to achieve what they want.

In these circumstances, the prospects for democracy become more complicated. Even if electoral districts were approximately the same size so that "one person-one vote" could be realised, those who are unequally endowed with resources are more likely to be able to afford to devote the time between elections to continuing the political pursuit of their goals. That is why electronic opportunities to promote social goals are now getting increased attention-e-participation could lower costs and increase convenience.

Performance: One of the truisms of business management is that customers don't care how either the production process or the "back office" works as long as they get good products at acceptable prices. Business performance has now been extended to include social and environmental objectives, but customers still usually focus on the deliverables rather than the methods. In a general sense, citizens are the same way when approaching government for services.

However, special interest critics try to hold governments accountable for all of their performance. Nevertheless, much of this criticism is ignored because it doesn't perturb the public's sense of acceptable governance. Studies have revealed that the

public is not always scrupulously fair in its judgments, but often simply wants "a good show" in the public arena of politics. A Canadian politician once mused that what the public wants to know is "who's minding the store", and are they doing so in a reasonably honest and competent manner.

If the public is satisfied in this respect, then they judge the prevailing performance of governance to be satisfactory. What complicates all of this is that superimposed on the base-line expectations of honesty and competence are temporary fads regarding political performance that catch the public's awareness and therefore demand attention.

Government officials and public servants are often left puzzling over "What does the citizenry really want?" Regarding the superimposed temporary fads, the answer seems to be that public wants are as changeable as the issues themselves. If the media issue of the day is "efficiency" then opinion polls will show a widespread concern for waste and demands for better performance.

As the focus subsequently changes, so will public demands. However, the honesty and competence expectations are perennial. Public health, national security, a prosperous economy, a safe environment, and other issues of this kind are the "bread and butter" of governance, and negligence is not usually tolerated for very long.

Coordination: The reason the public revels in superficial political fads but resonates with honest and competent performance is that it finds the minutiae of government boring but the larger coordination issues of governance compelling. People pay for governance just as they pay for commerce, and they want "value for their money" in both cases. What that value consists of, is often misunderstood and/or misrepresented by government officials and public servants, as well as the media.

The particulars of government operations require too much expertise to be readily understood by most members of the public. What does count for the public is their perception of the general quality of life. Analogously, to the situation with businesses, this means good services at acceptable costs (taxes

and user fees). The expectation of competency covers "good services", and the expectation of honesty covers "acceptable costs". When the public begins to feel either cheated or jeopardised they can suddenly begin to follow arguments and chains of events extraordinarily well.

One of the regrettable consequences of the bureaucratic mentality that Max Weber described is that the process of rationalisation is pervading more and more aspects of modern life. By rationalisation Weber meant the frame of mind wherein systematic and standardised procedures (the means) were being used to justify outcomes (the ends). In other words, "if the game is played by the rules [whether the game be business, politics, love, or war], then the results are acceptable no matter what the consequences". This is the use of procedural rationality used to subvert the aim of substantive rationality.

Paul Strassmann, one of the most respected information technology consultants in the United States, has conducted a number of empirical studies that show that the major cause of organisational malfunction is neither knowledge worker intransigence nor support staff sabotage, but rather persistent management missteps and ineptitude. His findings apply to government as much as to business. The public mandate for governance is to be as productive as feasible while being as unobtrusive as possible. That is why e-governance has such promising prospects.

Outcomes: During the American presidential campaign in the 1992 election the incumbent was using his success in foreign affairs to make his pitch for re-election, and the world saw the first of the signs at a protest march with the slogan *"It's the economy, stupid!"* Jobs and prosperity are the outcomes that most people in most developed countries want, regardless of the party in power, or the political situation abroad, or the special pleadings of interest groups.

Governments that are properly "minding the store" realize this first priority, and work to create the conditions to make it happen. Just as any other public concerns are super-imposed fads on the top of "jobs and prosperity", so the other agendas of elected and appointed government officials are also super-

imposed on top of their basic mandate. The social psychology of the modern world's political economy instills in people the belief that they are entitled to a relatively prosperous, secure existence, and that the major social institutions around them have an obligation to ensure that this happens.

Another briefly notable politician of the 1990s floated his concept of a *"Contract with the People"* as part of his party's campaign strategy. The "Jobs and Prosperity" expectation has actually been an implicit contract between the public and its governments in developed societies since the Great Depression of the 1930s. In the view of the majority of citizens, governance succeeds to the extent that it delivers on that contract.

Those in government often tend to confuse how they govern with why they govern. As suggested previously, this is an attempt to replace substantive rationality (outcomes) with procedural rationality (processes). Both are important, but for the public (which is the audience that counts) outcomes are far more important. Some analysts claim a propensity on the part of government officials to replace "why" by "how" on most occasions where they can display discretionary behaviour. In other words, given a choice, those in government will usually focus on what they want rather than what the citizenry wants.

Perhaps this is where the logic of "disintermediation" can be lifted from business and applied to governance. If templates for routinised decision-making could be developed for governance, and these could be loaded onto the Net, these aspects of governance could be built right into the social infrastructure and the arbitrary choices of government officials could be eliminated. Through componential software design, revisions in such templates could be deployed overnight from a single, secure source once such changes have been authorised and designed. Is this the direction in which e-government and e-governance are headed?

Characteristics of E-Government

Governments are the societal superstructure for politics, policies, and programs. So what does digitising that

superstructure and putting it online do to the quantity and quality of government?

Electronic Service Delivery: Governments can query, inform, and transact with the public over electronic networks. Since the public began to use the Internet for leisure and business, governments have been progressively migrating their service delivery onto electronic platforms. In the early days of the Internet this was justified as a great source of cost-savings. Many programs that involved information outreach were experiencing cost escalation as publishing, printing, and distribution costs continued to rise. Instead of cutting such efforts entirely during the period of down-sizing, the "webification solution" allowed documents to be posted on the World Wide Web with savings of as much as 75% of previous costs.

The shortcoming of this solution was the "digital divide" – only those with Internet connections could access the digitised documents. If most of the distribution went to government departments, other governments, businesses, or professionals, they already had or could readily acquire an Internet connection. Others less fortunate (lack of funds or lack of available interconnection points) began to claim they were being discriminated against.

Hence began government sponsorship of attempts to expand access and/or provide it for free (via freenets or community portals), such as the widely successful Community Access Program in Canada, and similar programs in other countries. These programs are clear attempts to provide opportunities to engage all of the citizenry in the nation into the benefits of cyberspace through efforts to bridge the digital divide.

Many of the initial webification solutions were quite primitive, with poor information layout, inadequate navigation provisions, no support for the impaired, slow electronic responses, occasional disruptions in service, periodically outdated content, and little or no "back office" support.

Criticism from a wide spectrum of users prompted improvements such as "common look and feel" standards, better

information architecture, feedback provisions, and manual or dynamic content updating.

When people began to pay taxes and user fees online, fill in questionnaires, apply for jobs in the public service, send e-mails to elected officials or public servants, and download documents, they became somewhat more satisfied, and governments in turn could begin to call their Internet efforts a success.

But as services improved, public expectations for online government capabilities increased. Now citizen users want (and get) search engines on government websites, responses to their e-mail queries within a set time limit, instant access to electronic public documents as soon as they are released, and opportunities to purchase chargeable information with a credit card or account.

What else does the public want over the Internet that their governments could provide?

- Access by a person to all the personal data on that person that is held in government data banks. So far this is limited by security, privacy, and confidentiality concerns.
- Access to all government documentation of all kinds by anyone. At present the storage and retrieval costs are prohibitive, and there are also security, privacy, and confidentiality concerns here as well.
- Information architecture that permits one-stop-shopping for all information from all governments in a simple thematic directory. There are also cost constraints, and no known technology to integrate, index and search all of this information.

Electronic Workflow: The kinds of templates that the public wants on the Internet to complete its transactions with government can also be the basis for automating the internal workflow that constitutes most of government "back office" activity. At present this is handled within the public service by attaching documents to e-mails for collegial circulation. This is certainly better than nothing, or than walking the document around to recipients – but it is not adequate, given the needs

on the one hand, and the capabilities of advanced networks on the other.

There are some sophisticated templates currently designed and deployed throughout government intranets. There should be the same standardised set for every type of transaction located in every government department and agency. Just as with "business rules", there is the potential to develop "administrative rules" to routinise 80% of this information processing and decision-making. Rationalisations that these procedures are unique are simply premised on a failure of either design or re-engineering.

There are also larger issues in this area that involve security, privacy, and confidentiality. Effective policy analysis and program design must be evidence-based using comparative data. Only that way can alternate expenditures or measures be rated as to unit-cost, efficacy of impact, cost-effectiveness, and cost-benefit assessment. To do this however, all government data from all departments and agencies would need to be held in a centralised repository within which data mining and program scenarios can be performed.

Most additional improvements in policy analysis, program design, and service deployment will only come from automated data processing and integrated data repositories. The components of networks have already been almost fully optimised.

There are many more workflow productivity gains to be had, but only from improvements at the systemic level. To satisfy security, privacy and confidentiality concerns, planning data must be stripped of its personal particularities-it must be aggregated by category and safeguarded by rigorous information stewardship provisions. This is not nearly as onerous as it sounds – the primary hesitation is, once again, the arbitrary control prerogatives that departments and agencies would have to relinquish to make this type of solution workable.

Electronic Voting: In regards to electronic voting there is the potential for designing an effective ballot based on a template similar to an electronic form. Choice options could be designed into such ballots so that only one alternative per category could

be entered (so the category would either be left blank or have one entry).

In the case of balloting however, the concerns over security, privacy and confidentiality are actually more worrisome than with most other electronic interactions. An elected official in the United States was once overheard to claim he knew the way every single member of his constituency had voted, and to prove his point went on to name off street after street of results! Whether this was authentic or just hype, it is a basic fear of many voters, the reason being that the official then went on to explain that he spared no effort to reward his supporters and punish those who hadn't voted for him.

If the suspicion arises that the record of electronic voting can be accessed by candidates, voters are unlikely to trust the process enough to agree to use it. The challenge for any proposal to increase electronic voting is to build sufficient public trust in the security of the record of results.

Electronic Productivity: The rationale for e-government is *better operations at lower cost*, i.e., productivity. Despite the forecasts of marxists and anarchists, there does not seem any prospect of the "withering away of the state" within the foreseeable future. The social need to ensure public health and safety, national security and crime control, economic prosperity and environmental sustainability, will all guarantee the presence of governments and their active involvement in our lives, whether visibly or "behind the scenes".

What we can and do expect however, is improved efficiency in the results we get from our expenditures. Another of sociologist Max Weber's insights was that universities could act as "think tanks" for society, to develop ideas and proposals on ways to accomplish social improvements. The result of a better-educated public since Weber's time is that, in terms of suggestions for improving government, more and more people feel entitled and empowered to express their views.

In these circumstances, governments that rule with the consent of their publics cannot afford to ignore or dismiss their constituents' proposals. Whether governments actually use the inputs from their publics is another question. Some critics

claim that what occurs may be termed "impression management" wherein a show is made of the comments received but then only minor adjustments are likely to occur.

Nevertheless, the public does want more (services) for less (taxes), and on the political level the possibility of shifting party allegiances exist if citizens are unhappy with current government policy. Given this reality, electronic productivity seems by far the best way for governments to achieve the trade-offs between increasing expectations and diminishing resources. But there are unintended consequences of this trend – as the performance of consumer electronic products improves, people will want the new capabilities applied to government, just as has happened already. Electronic technologies are playing a large role in shaping the mind-set of citizens, and they will want that mind-set reflected in social governance. For their part, governments will continue to be faced with the challenge of keeping up with the new technological advancements.

The Characteristics of E-governance: Governance is the societal synthesis of politics, policies, and programs. So what does digitizing this synthesis and having it online do to the quantity and quality of societal outcomes?

Electronic Engagement: The possibilities for the public to engage in the policy process via electronic networks range all the way from sending elected officials an e-mail to creating a distinct conferencing facility (e-mail box, document repository, chat room, etc.) for each major policy initiative (whether a new policy, or changes in an existing policy). Considered on a global basis, there have been some examples of almost every degree of involvement and combination of elements that one can imagine, although full-fledged electronic engagement is still not very frequent.

Electronic citizen engagement is an area in which examples are so varied, and changing so quickly that any list of current practices would be out of date between the time it was compiled and the time it was published. More useful would be an outline of effective practices that could be used to direct the design of future efforts. The Organisation for Economic Cooperation and Development (OECD) has proposed just such a list.

Guiding Principles for Successful on-line Engagement

Guideline	***Details***
1. Start planning early	duration, participants, preparatory info, format of acceptable inputs, utilisation of acceptable inputs
2. Demonstrate commitment	high-level support, outline purpose, agree to publish results, explain utilisation intentions
3. Guarantee personal data protection	assure and insure data security, data privacy, data confidentiality and even anonymity (if desired)
4. Tailor your approach to fit your target group	select suitable participants, customise sessions to suit group, provide additional support when appropriate (disability, etc.)
5. Integrate online engagement with traditional methods	use such complementary methods as public roundtables, focus groups, and dedicated web sites to provide multiple channels
6. Test and adapt your tools	before launching ensure tools (software, questionnaires, etc.) actually work, and modify based on user suggestions
7. Promote your online engagement	use press conferences, advertising, links to websites, e-mails, and posters to create awareness and support
8. Analyze the results	commit the wherewithal (time, resources, expertise) to assure that the results are understood and interpreted for use
9. Provide feedback	publish results of the online engagement as soon as possible, spell out next steps, explain uses of engagement inputs
10. Evaluate the engagement process and its impacts	do a "lessons learned" after the engagement process to assess choice of participants, level of satisfaction, quality of inputs

These guidelines will enable agenda-setting, analysis, synthesis, implementation and monitoring, the five stages in the OECD policy-making paradigm.

Electronic Consultation: This is the part of governance that refers to interaction between public servants and the

citizenry and interest groups. As stated in the earlier section on e-governance, contact between the public service and interest groups has been on-going for years. But two recent developments have come together to produce something quite extraordinary:

(1) Ordinary citizens now have the potential to participate in rule-making (crafting regulations); and

(2) electronic rule-making has gained a foothold in the U.S. national government.

The prospects for public consultation in electronic rulemaking are now so promising that the John F. Kennedy School of Government at Harvard University has set up a separate section of their Regulatory Policy Program to track e-rulemaking, and contribute to its development. One of the scholars involved in the tracking of these developments, Gary Coglianese, has summarised the state of the art in a paper prepared this year.

E-Rulemaking's Potential for Change

Issue	*Elaboration*
mobilisation	do more people get involved in the rulemaking process?
distribution	who is involved (ordinary citizens or special interests)?
frequency	are there regulars and occasional participants?
knowledge	do people learn from the e-rulemaking experience?
tone	does tone, style or emphasis of expression change?
ideas	are the ideas diverse; do they change during the process?
conflict	are conflicts mitigated or exacerbated?
perceptions	how do people feel toward others and the government?
spillovers	are there carry-overs to other areas of politics?
organisation	does e-rulemaking change groups that participate?

E-Rulemaking's Potential Impact on Government

Issue	***Elaboration***
time	does the rulemaking timeline expand or contract?
cost	does e-rulemaking require more or less staff?
response	how do public servants respond to public input?
role	does the role of public decision-maker change?
agency deliberation	will transparency promote or inhibit staff deliberation?
outcomes	does e-rulemaking give better decisions, behaviours, results?

These questions are all good ones, and we can only guess at the answers – the process has not been practiced or studied enough to be definitive. However, this probably is the "wave of the future" and the answers from studies should help in improving the design of both participation and regulations.

Electronic Controllership: Controllership consists of protocols used to manage the cost, performance, and services of an organisation. In electronic controllership the capability is placed on a network, thereby reflexively managing the network's infrastructure and content. There are two aspects to successful controllership, both of which much be optimised and integrated to achieve full benefits, namely hardware configuration, and software customisation.

To effect controllership all informatics and telematics hardware must be interconnectable into a single system. All plugs, sockets, amperage, voltage, and signal and electron flows must be compatible. As an example, prior to World War I, each light bulb manufacturer had a unique socket to lock-in users to their particular products. Only with the governments' organisation of the war effort were socket sizes standardised to a few functional alternatives. Yet today each brand of cell phone still has a different receptacle size for its recharger.

Purchasing protocols should include standardised interconnectors.

Capacity should also be standardised. Employee e-mailboxes should have similar storage space, all Internet connections should have the same baud rate, and attached documents should all have the same byte-limit on their size. What does any of this have to do with e-governance? Electronic technologies are playing a large role in shaping the mind-set of citizens, and they will want that mind-set reflected in social governance. It works the other way too – the psychology of standardised platforms helps to instill the psychology of systematic governance. And as both the providers and the beneficiaries of governance agree, when it comes to governance, reliability is a primary directive.

Governance software should also be standardised, whether it be operating systems or application programs. The transition to componential design is now well advanced, which makes this standardisation easier to accomplish. In componential design, individual functions are located in modules that consist of logic, data, and an interface. Functions are decomposed to keep module size within manageable proportions. Any upgrades or extensions can be deployed from a management console to all users throughout the network. Only the specific modules being changed will be affected during such deployments.

The other aspect of software design that needs standardisation to accomplish controllership is the use of extensible markup language (XML) for file formats and document layouts. XML is a "meta-language" with structuring rules for text, graphics, pictures, video, and sound bytes. It is used on the Internet, and can be incorporated into each and every software application. Recently a version of XML has been developed that is a business reporting language. Another version of XML needs to be developed for a political reporting language– that way all forms of government can have standard configurations as well as semantic standards for clarity and meaningfulness.

Such electronic controllership is the formation towards which e-governance is evolving. So far that evolution has been

haphazard, bringing both advantages and disadvantages. The disadvantage is that the process has been slow and chaotic. The advantage is that a range of new "systems", on the nature of work in the workplace, have been put in place. Such changes are resulting in increased efficiencies and better services to the citizen along with the capabilities to engage the citizen in the processes of government decision-making and policy evolution. As network capabilities in this regard become more apparent however, some major decisions will have to be taken about the acceptable purpose and allowable methods of this controllership. Implicit in these considerations is the mission of governance itself, the final feature on the e-governance list.

Networked Societal Guidance: Who watches the watchers, who governs the governors? This has been a central question of political analysis, as far back at least as the Ancient Greeks. The concept of distribution of powers, between branches within a government, and between jurisdictions within a country, has gone part way to answering this question. Those who are competing for power will watch each other, either to keep everyone honest or to expose the illicit practices of competitors. The rise of the mass media served to inform public opinion of such infractions much more quickly and thoroughly than when all news travelled by word of mouth. Recently the Internet has become an even speedier vehicle for such disclosures.

Beyond just exposing scandalous misdeeds however, the Internet promises a far more profound possibility: each and every citizen so interested can receive instant information updates on the current conditions of governance, and give either feedback or guidance to the governance system through online policy and rulemaking development facilities. When Canadian Prime Minister Pierre Trudeau advocated "participatory democracy" 35 years ago, he was simply engaging in political wishful thinking, because the wherewithal to implement such an arrangement did not exist then. But now that we do have the Internet, there is a greater challenge to share more and more information with the public in order to contribute to the knowledge society.

In reality, what we are waiting for are two "success conditions" needed for participatory democracy. Firstly, there is a need for government (elected officials and public servants) to adjust to an entirely different paradigm of power based on network distribution rather than hierarchical ranking. This new political configuration will not be a radical egalitarian arrangement – not all nodes on the network are equal. But with everyone on the network, access, security, privacy, confidentiality, feedback, response time, and fair use, will all have to be defined and managed very differently than in the previous paradigm. It is important for governments to vigorously engage in this transaction in order to counter growing cynicism from citizens who are seeing benefits of these new technologies in their private and working lives and want similar results when dealing with government.

Secondly, the architecture of participatory governance will have to be designed, built, and operated to provide the kind of functionality the public will want. All the issues and questions raised by Coglianese about e-rulemaking will have to be addressed to participatory governance. Preliminary designs will be proposed, prototyped, deployed, and then revised as users try them and make suggestions. It could take anywhere between a year and a decade, once the process gets started. Getting started may also take a year or a decade, but the logic of the eventual emergence of participatory governance seems inevitable if both democracy and networking continue to receive the degree of social support that they have so far.

Conclusion

As stated at the beginning of this paper, it will be important for government to continue to use the nomenclature of e-government, e-governance and e-democracy for a number of reasons. This is a growing subject matter and it is essential that governments create harmony and consistency in any evolutions being undertaken. The growth of ICTs and programs, implementing old and new technologies, requires a continuous stream that can be understood by the public.

This point becomes evident when assessing and comparing the six milestones of government and the six milestones of e-

governance, as set out above in this paper (p.6). These pillars of public administration, evolved and articulated over the past three to four centuries, have created a professional and modern public service. This evolution has come about through careful debate, trial and error and implementation. Change as has been needed as public service organisations around the world grew to cope with the challenges of the modern world. Public Administration as a discipline is recognised and accepted in academic and public sector institutions worldwide. The pillars of e-government and e-governance are now being defined and considered as the natural extensions of the sound methodologies of how government organisations should be run. It is recognised that while the rapid evolution of new technologies have created challenges for all governments, sound administrative principles are the order of the day.

It is not a question of throwing out all that public sector has developed over the past hundreds of years but rather taking the tried and true principles of public administration and applying them to the "e" world. Governments by nature are conservative organisations and slow to adapt to change. In the private sector slowness in adapting to change can be disastrous for a company who may have to close up shop because of poor administration, bad administrative practices, errors in judgment about changes within their company, or misreading of the public mood. Companies are very much subject to the winds of change.

Governments are the reverse. Governments are the stable point in a society. It doesn't matter how much cynicism might come from certain quarters of the media or the public at large, governments do not dissolve. Political parties are subject to mood swings and changing loyalties in the public but, in all strong democracies, it is a change of political parties that become the "elected" government. The public administration continues and does not go away because a new political party takes office. This does not mean that accountability, trust and openness with the government are not important. What is the most important fact is that government is perceived, and continues to be perceived, as the bedrock of society. This is

another good reason why the transition to e-government, e-governance and e-democracy is a smooth one, but does not send a message that somehow government as we have known it is now gone and a new order has emerged. It is another argument as to why the nomenclature must be kept so that changing needs and expectations (coming from the public) are presented in a recognisable way.

This paper has dealt with the overarching issues of "government" and "governance" in relation to the transition to new forms of government. The purpose is not to send a message that somehow government has changed in a radical or fundamental way. Such changes only come when societies have revolutions (and even these are philosophical in nature as to what government should be) or when there are deep discussions and debate in society over the years to change the nature of government. Thus, the important principles articulated in this paper are put forth as a means and a method to which governments can go forth into meeting the new challenges of the digital world while being rooted in the strengths of its past.

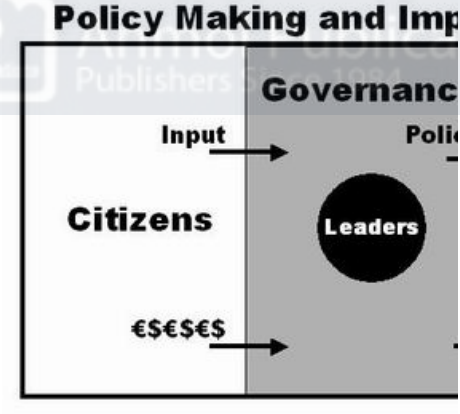
Government and governance are both about getting the consent and cooperation of the governed. But whereas government is the formal apparatus for this objective, governance is the outcome as experienced by those on the receiving end. E-government can be a more productive version of government in general, if it is well implemented and managed. E-governance can evolve into participatory governance if it is well supported and architected. What stands in the way of good e-government and e-governance is establishment resistance from many who do not wish to change the status quo, and public cynicism, the latter being a much larger issue above and beyond e-government and e-democracy. Given the way that technology developments are currently shaping public expectations however, citizens will continue to expect more as new states of technologies evolve. The transition to participatory governance will probably be slower, messier and costlier than it need be, but democracy always has been somewhat chaotic.

4

E-Democracy and Public Network

Introduction

While the art and practice of government policy-making, citizen participation, and public work is quite complex, the following illustration provides a simple framework used in this paper:



In this model of traditional government policy-making:

1. Citizens provide occasional input between elections and pay taxes.
2. Power in the Governance infrastructure is centred with political leaders who determine broad policy priorities and distribute resources based on those priorities and existing programs and legal requirements.

3. Through government directly, and other publicly funded organizations, Public Work represents the implementation of the policy agenda and law.

Over time of course, bureaucratic barriers to reform make it difficult for leaders to recognize changes in citizen needs and priorities. Citizen input, outside of elections, often has a difficult time getting through. Disconnects among citizens, leaders, and those who implement public work are often based on the inability to easily communicate through and across these groups.

As our one-way broadcast world becomes increasingly two-way, will the governance process gain the ability to listen and respond more effectively?

The information-age, led by Internet content, software, technology, and connectivity, is changing society and the way we can best meet public challenges. E-democracy, e-governance, and public network are three interrelated concepts that will help us map out our opportunity to more effectively participate, govern, and do public work.

E-Democracy

E-democracy is a term that elicits a wide range of reactions. Is it part of an inevitable technology driven revolution? Will it bring about direct voting on every issue under the sun via the Internet? Is this just a lot of hype? And so on. (The answers ... no, no, and no.)

Just as there are many different definitions of democracy and many more operating practices, e-democracy as a concept is easily lost in the clouds. Developing a practical definition of E-Democracy is essential to help us sustain and adapt everyday representative democratic governance in the information age.

Definition : After a decade of involvement in this field, I have established the following working definition:

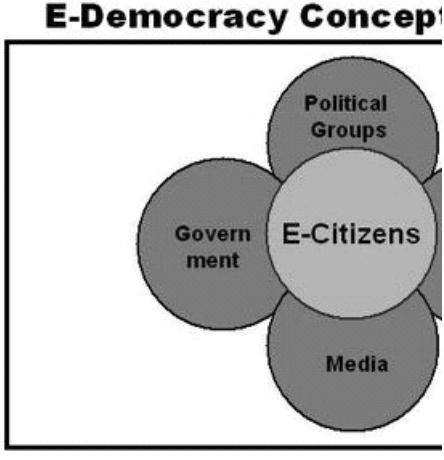
E-Democracy is the use of information and communications technologies and strategies by "democratic sectors" within the political processes of local communities, states/regions, nations and on the global stage.

The "democratic sectors" include the following democratic actors:

- o Governments
- o Elected officials
- o Media (and major online Portals)
- o Political parties and interest groups
- o Civil society organizations
- o International governmental organizations
- o Citizens/voters

Current E-Democracy Activities : Each sector often views its new online developments in isolation. They are relatively unaware of the online activities of the other sectors. Those working to use information and communication technologies (ICTs) to improve or enhance democratic practices are finding e-democracy a lot more challenging to implement than speculating on its potential. This is why it is essential for the best e-democracy lessons and practices to be documented and shared.

This simplified model illustrates e-democracy activities as a whole. Building on the first diagram it, sits as a filter on the "input" border between citizens and governance in first diagram:



Governments provide extensive access to information and interact electronically with citizens, political groups run online advocacy campaigns and political parties campaign online, and the media and portal/search sites play a crucial role in providing news and online navigation.

In this model, the "Private Sector" represents commercially driven connectivity, software, and technology. This is the whole of e-democracy.

E-democracy is not evolving in a vacuum with these sectors only. Technology enhancements and online trends from all corners of the Internet are continuously being adopted and adapted for political and governance purposes. This is one of the more exciting opportunities as e-mail, wireless networking, personalization, weblogs, and other tools move in from other online content, commerce, and technology areas and bring innovation and the opportunity for change with them.

Looking to the centre of model, the only ones who experience "e-democracy" as a whole are "citizens." In more "wired" countries most citizens are experiencing information-age democracy as "e-citizens" at some level of governance and public life. In developing countries, e-democracy is just as important, but exists as more of an institution-to-institution relationship.

In all countries, the influence of "e-democracy" actually reaches most of the public through its influence on the traditional media and through word of mouth via influential members of the community.

"E-Citizens"- Greater Citizen Participation?: To many, e-democracy suggests greater and more active citizen participation enabled by the Internet, mobile communications, and other technologies in today's representative democracy. It also suggests a different role for government and more participatory forms of direct citizen involvement in efforts to address public challenges. (Think e-volunteerism over e-voting.)

Some take this further and view the information revolution as an inherently democratic "disruptive technology" that will

dramatically change politics for the better. This view has diminished considerably, as existing democratic actors have demonstrated their ability to incorporate new technologies and online communication strategies into their own activities and protect their existing interests. They have to in order to survive.

In the future, most "e-democracy" development will naturally result from ICT-accelerated competition among the various political forces in society. We are experiencing a dramatic "e-democracy evolution." In this evolution, the role, interests, and the current and future activities of all actors is not yet well understood. There is still an opportunity to influence its development for the better.

Things will change, but as each democratic sector advances their online activities, democratic intent will be required to achieve the greater goals of democracy.

E-Governance

I use the phrase "Representative E-Government" to describe the e-democracy activities of government institutions. Others call this "e-governance." Whether a local government or a United Nations agency, government institutions are making significant investments in the use of ICTs in their work. They are expressing "democratic intent." Their efforts make this one of the most dynamic and important areas of e-democracy development.

There are distinct differences in how representative institutions and elected officials use ICTs compared to administrative agencies and departments. The use of ICTs by parliaments, heads of state/government, and local councils (and elected officials in these institutions) lags significantly behind the administrative-based e-government service and portal efforts. This is a services first, democracy later approach.

This focus of e-government resources on services does not mean that e-democracy is not gaining increased attention in some governments. In fact, leading e-service governments are

now at a point where they are exploring their e-democracy responsibilities more seriously.

Goals for E-Democracy in Governance : Investment in traditional e-government service delivery is justified based on the provision of greater citizen convenience and the often-elusive goal of cost-savings. Goals for e-government in governance that promote democracy and effective governance include:

1. Improved government decisions
2. Increased citizen trust in government
3. Increased government accountability and transparency
4. Ability to accommodate the public will in the information-age
5. To effectively involve stakeholders, including NGOs, business, and interested citizen in new ways of meeting public challenges

Consultation Online : The first area of government e-democracy exploration has focused on consultation within executive policy-making processes. Governments, like the United Kingdom and Canada, are taking their consultative frameworks and adapting them to the online environment. New Zealand and Canada now have special portals dedicated to promote the open consultations across their governments. This includes traditional off-line opportunities as well as those where online input is encouraged. Across the UK, a number of "online consultations" have been deployed to gather special citizen input via the Internet.

Accountability, Trust, the Public Will : These three themes are emerging on the e-democracy agenda. Building government accountability and transparency are a significant focus of e-government in many developing countries. E-government is viewed an anti-corruption tool in places like South Korea, Mexico, and others. Trust, while an important goal, can only be measured in the abstract. Establishing a causal relationship between e-government/e-democracy experiences and increased levels of trust will be difficult.

Ultimately, the main challenge for governance in the information age will be accommodating the will of the people in many small and large ways online. The great unknown is whether citizen and political institutional use of this new medium will lead to more responsive government or whether the noise generated by competing interests online will make governance more difficult. It is possible that current use of ICTs in government and politics, which are often not formulated with democratic intent, will actually make governance less responsive.

One thing is clear, the Internet can be used to effectively organize protests and to support specific advocacy causes. Whether it was the use of e-mail groups and text massaging protesting former President Estrada of the Philippines or the fact a majority of Americans online sent or received e-mail (mostly humour) after the Presidential election "tie" in the United States, major moments in history lead to an explosion of online activity.

The social networks online are very dynamic and governments need to be prepared to accommodate and react to "electric floods." When something happens that causes a flood, people will expect government to engage them via this medium or citizens will instead view government as increasingly unresponsive and disconnected with society they are to serve.

Public Net-Work

Public network is a new concept. It represents the strategic use of ICTs to better implement established public policy goals and programs through direct and diverse stakeholder involvement online.

If e-democracy in government represents input into governance, then public network represents participative output using the same or similar online tools. Public network is a selective, yet public, approach that uses two-way online information exchange to carry out previously determined government policy.

Building on the first diagram, the following "bow-tie" model suggests a more fluid communication environment that can be

used to bring citizens and public work stakeholders closer to the centre of governance. It also suggests that policy leaders can reach out and develop closer relationships with citizens and stakeholders.

What are Public Network Projects? : Public network projects have the following things in common:

1. They are designed to facilitate the online exchange of information, knowledge and/or experience among those doing similar public work.
2. They are hosted or funded by government agencies, intergovernmental associations, international government bodies, partnerships involving many public entities, non-governmental organizations, and sometimes foundations or companies.
3. While they are generally open to the public, they are focused on specific issues that attract niche stakeholder involvement from other government agencies, local governments, non-governmental organizations, and interested citizens. Essentially any individual or group willing to work with the government to meet public challenges may be included. However, invite-only initiatives with a broader base of participants are very similar to more strictly defined "open" public network initiatives.

4. In a time of scare resources, public network is designed to help governments more effectively pursue their established missions in a collaborative and sustainable manner.

In order to work, public network initiative hosts need to shift from the role of "top experts" or "sole providers" of public services to facilitators of those working to solve similar public problems. Public network moves beyond "one-way" information and service delivery toward "two-way" and "many-to-many" exchange of information, knowledge, and experience.

Features : Publicly accessible public network projects currently use a mix of ICT tools available. The successful projects adopt new technologies and strategies on an incremental trial and error basis. Unleashing all of the latest tools and techniques without a user base may actually reduce project momentum and user participation.

To succeed, these projects must adapt emerging models of distributed information input and information sharing and develop models for sustained knowledge exchange/discussion. They must also build from the existing knowledge about online communities, virtual libraries, e-newsletters, and Communities of Practice/Interest.

Some of the specific online features include:

1. *Topical Portal:* The starting point for public network is a web site that provides users a directory to relevant information resources in their field - these often include annotated subject guide links and/or standard Yahoo-style categories.
2. *E-mail Newsletter:* Most projects keep people up-to-date via regularly produced e-mail newsletters. This human edited form of communication is essential to draw people back to the site and can be used to foster a form of high value interaction that helps people feel like they are part of the effort.
3. *Personalization with E-mail Notification:* Some sites allow users to create personal settings that track and notify them about new online resources of interest. New resources and links to external information are often

placed deep within an overall site and "What's New" notification dramatically increases the value provided by the project to its users.

4. *Event Calendar:* Many sites are a reliable place to discover listings of key current events and conferences.
5. *FAQ and Question Exchange:* A list of answers to frequently asked questions as well as the regular solicitation of new or timely questions from participants. Answers are then gathered from other participants and shared with all via the web site and/or e-newsletter.
6. *Document Library:* Some sites move beyond the portal directory function and gather the full text of documents. This provides a reliable long-term source of quality content that often appears and is removed from other web sites without notice.
7. *Discussions:* Using a mix of e-mail lists and/or web forums, these sites encourage ongoing and informal information exchange. This is where the "life" of the public network online community is often expressed.
8. Other features include news headline links from outside sources, a member directory, and real-time online features.

Lessons :

1. Government partnerships, with their public missions and resources, often make ideal hosts for broad, horizontal information exchange. Government departments that feel their status/purpose will be threatened by shifting from an expert gatekeeper to an involved facilitator are not ideal hosts.
2. All online features must be designed with the end user in mind. They must be usable and easy to learn. Complex systems reduce the size of the participatory audience - public network cannot rely on an internal office environment where people are required to learn new systems or use speciality software beyond e-mail and a web browser. To provide a strong incentive, these systems must save the time it takes those implementing public policy to do their job effectively.

3. Public network sites broaden the awareness of quality information resources on a timely basis. Finding what you need, when you need it is more likely to occur when a community of interest participates in building a comprehensive resource. However, over time these sites will naturally face currency issues that must be handled. There are limits to the value of information exchange. Too much information, or bad information, can paralyze decision-making or distract people from the task at hand. All good things should be taken in moderation.
4. Building trust among the organizations and individuals participating in the development and everyday use of a collaborative site is essential. This relates to developing the "neutral host" facilitation role, along with sustained funding, by the host. Special care must be taken when building partner relationships and host "branding" kept to a minimum. Partnerships, with clear responsibilities and goals, will better position efforts as a truly participatory community projects.
5. Gathering and sharing incentives, particularly for resource links is a particularly tricky area. Involving people with solid librarianship and communication skill sets is essential. Creating a more sustainable model where participants more actively submit information (e.g. seeking submissions from users for more than 5% of link listings for example) is an ongoing challenge. In-kind partnerships where staff time is donated may be more effective than relying on the time of unaffiliated individual volunteers. With more localized efforts, individual volunteers may be the best or only option.
6. Informal information sharing has tremendous potential. To effectively encourage horizontal communication, facilitation is often required. Projects must leverage existing online communities and be willing to use technologies, like e-mail lists if that is what people will actually use. In my opinion, the CommunityBuilder.NSW site is one of the few sites that effectively integrate e-mail and web technology to support sustained online deliberation and information exchange.

7. The connection to decision-makers and authority is significant. Government-led public network projects require political leadership and strong management support. Paradoxically, an effective online involvement program on the implementation side of government, if connected to government leaders, may operate as an "early warning system" and allow government to adapt policy with fewer political challenges.

Conclusion : To be involved in defining the future of democracy, governance and public work at the dawn of the information-age is an incredible opportunity and responsibility. With the intelligent and effective application of ICTs, combined with democratic intent, we can make governments more responsive, we can connect citizens to effectively meet public challenges, and ultimately, we can build a more sustainable future for the benefit of the whole of society and world in which we live.

Bibliography

Adonis, A. and Mulgan, G.: *Connecting each to all*, Washington, DC: A-P-T, 1994.

Artherton, F.C.: *Can technology protect democracy?,* Washington, DC, Roosevelt Centre for American Policy Studies and Sage, 1987.

Barber B.R.: *Strong democracy. Participatory politics for a new age*. Berkeley, University of California Press, 1984.

Bell, D.: *The coming of post-industrial society. A venture in social forecasting*, New York, Basic Books, 1973.

Bench-Capon, T.: *Knowledge- based systems and legal applications*, London, Academic Press, 1991.

Benefits Agency: *One stop. Benefits Agency delivery*, Leeds, Benefits Agency, 1992.

Beniger J.R.: *The control revolution*, Cambridge, Harvard University Press, 1986.

Best M.: *The new competition. Institutions of industrial restructuring*, Cambridge, Polity Press, 1990.

Budge I: *The new challenge of direct democracy*, Oxford, Polity Press, 1996.

Burns D. Hambleton, R and Hoggett, P.: *The politics of decentralisation*, Basingstoke, MacMillan, 1994.

Callon, M.: *The study of technology as a tool for sociological analysis*, Boston, MIT Press, 1987.

Castells, M.: *The informational city*, Oxford, Basil Blackwell, 1989.

CCTA: *The government centre for information systems,* Norwich, CCTA, 1995.

Child J and Loveridge. R.: *Information technology in European services*, Oxford, Blackwell, 1990.

Clarke M. and Stewart J.: *The public service orientation*, Luton, Local Government Training Board, 1986.

Davidow, W.H. and Malone, M.S.: *The virtual corporation*, New York, Harper Collins, 1992.

Davies .A.: *Telecommunications and politics. The decentralised alternative*, London, Pinter, 1994.

Department of Health: *Code of practice on openness in the NHS*, London, Department of Health, 1995.

Dizard W.: *The coming information age*,London, Longman, 1989.

Doulton, A.: *Government and community information services*, Oxford, Dragonflair and CDW & Associates, 1994.

Dutton W.H. Blumler, J.G. Kraemer K.L.: *Wired cities: shaping the future of communications*, Los Angeles, Annenberg School of Communciations, 1987.

Efficiency Unit: *Resource management systems*, London, HMSO, 1995.

Ernst, H. and Jaeger, C.: *Information society and spatial structure*, London, Belhaven, 1989.

European Commission: *G-7 ministerial conference on the information society: theme paper*. Brussels, European Commission, 1995.

Fallon I: *The paper chase: ten years of change at DSS*, London, Harper Collins, 1993.

Foreman-Peck J. and Millward, R: *Public and private ownership of British industry 1820-1990*, Oxford, Clarendon Press, 1994.

Freeman C.: *The economic of innovation*, Harmondsworth, Penguin, 1984.

Garrett, J.: *Managing the civil service*, London, Heinemann, 1980.

Gingrich N.: *Speeches*, available at http://dolphin.gulf.net/Gingrich/, 1994.

Giordona, L.: *Beyond taylorism*, London, MacMillan, 1993.

Goldman, H.: *Co-ordination of computerization of the criminal justice system*, London, Home Office, 1986.

Gore A: *Creating a government that works better and costs less*, New York, Plume Books and Penguin, 1993.

Graham S.: *Best practice developing community teleservice centres*, Manchester, University of Manchester, 1991.

Greer P.: *Transforming central government: the next steps initiative*, Buckingham, Open University Press, 1994.

Gyford J: *The politics of local socialism*, London, George Allen and Unwin, 1985.

Hammer M. and Champy, J.: *Re-engineering the corporation*, New York, Harper Collins, 1993.

Hepworth, M.: *The geography of the information economy*, London, Belhaven, 1989.

HM Treasury: *Competing for quality*, London, HMSO, 1991.

Holman K.: *Plan large, deliver small. Balanced decentralisation in the country councils*, London, Association of County Councils, 1994.

House of Commons: *Report of the house of commons select committee on the telephone service*, London, HMSO, 1921.

Hudson, Heather, E.: *Economic and social benefits of rural telecommunications: a report to the world bank*, Washington DC, The World Bank, 1995.

Information Technology Advisory Panel: *Making a business of information,* London, HMSO, 1983.

Inland Revenue: *Electronic lodgement service. Second consultative document*, London, Inland Revenue, 1995.

Jarillo, J.C.: *Creating the borderless organization*, Oxford, Butterworth-Heinemann, 1993.

Jones, S.G.: *Computer mediated communication and community*, Thousand Oaks, CA: Sage, 1995.

Kable: *Civil Service IT market profile 1995-6*, London, Kable, 1995.

Keane J.: *Democracy and civil liberty*, London, Verso, 1988.

Laudon K.: *Communications technology and democratic participation*, New York, Praeger, 1977.

Lipietz A.: *Mirages and miracles,* London, Verso, 1987.

Lynn P.: *Public perceptions of local government: its finances and services*, London, HMSO, 1992.

Mackenzie, D.: *Knowing machines: essays on technical change*, London, Mit Press, 1996.

Macpherson, C.B.: *Democratic theory. Essays in retrieval*, Oxford, Clarendon Press, 1973.

Manshell R.: *The new telecommunications. A political economy of network evolution*, London, Sage, 1993.

Martin J.: *The wired society*, Englewood Cliffs, Prentice Hall, 1978.

Masuda Y.: *Managing in the information society,* Oxford, Basil Blackwell, 1990.

McCalman and D. Buchanan: *The new management challenge*, London, Croom Helm, 1988.

Mclean, I.: *Democracy and new technology*, Cambridge, Polity Press, 1989.

Monopolies and Mergers Commission: *Telephone number portability*, London, HMSO, 1995.

Mulgan G.: *Communication and control: networks and the new economics of communications*, Cambridge, Polity Press, 1991.

Naisbitt, J.: *Ten new directions transforming our lives*, London, Macdonald, 1984.

National Audit Office: *The financial management initiative*, London, HMSO, 1986.

NCC: *The information society. Getting it right for consumers*, London, National Consumer Council, 1996.

Negroponte N.: *Being digital*, London, Holder and Stoughton, 1995.

Nora S. and Minc. A.: *The computerization of society*, Cambridge, MIT Press, 1980.

Office of Public Service: *A prospectus for the electronic delivery of government services*, London, HMSO, 1996.

OFTEL: *Households without a telephone,* London, OFTEL, 1994.

Osborne D. and Gbaebler, T.: *How the entrepreneurial spirit is s transforming the public sector*, Reading, Addison Wesley, 1992.

Palfreman, J. and Swade, D: *The dream machine. Expoloring the computer age*, London, BBC Publications, 1991.

Philips A.: *The terms of the debate*, London, Commission for Local Democracy, 1994.

Piore M. and Sabel. C: *The second industrial divides. Possibilities for prosperity*, New York, Basic Books, 1984.

Politt. C: *Managerialism and the public services*, Oxford, Blackwell, 1993.

Ponting C.: *Secrecy in Britain*, Oxford, Blackwell, 1989.

Quinn, J.B.: *A new paradigm for a new era*, Berkeley, University of California Press, 1992.

Ranson S. and Stewart J.: *Management for the public domain: enabling the learning society*, Basingstoke, St. Martin's Press, 1994.

Rawlings C. Temple, M. and Thrasher M.: *Community identity and participation in local democracy*, London, Commission for Local Democracy, 1994.

Rhleingold, H: *The virtual community in a computerized world*, London, Secker and Warburg, 1993.

Richardon J. and Cram L.: *Citizenship and local democracy. A European perspective*, Luton, Local Government Management Board, 1992.

Sackman, H and Boehm B.: *Planning community information utilities*, Montvale, AFIPS Press, 1972.

Sawhney, H and Nie, N: *The information utility and social choice*, Montvale, AFIPS Press, 1970.

Scott. Morton, M.: *Information technology and organizational organizational transformation*, Oxford, Oxford University Press, 1991.

Stoker G.: *The politicals of local government*, Basingstoke, MacMillan Educational, 1988.

Stonier, T.: *The wealth of information. A profile of the post-industrial economy*, London, Methuen, 1983.

Taylor, J.A. Bellamy, C. Raab, and Peltu, M: *Information and communication technologies: vision and realities*, Oxford, Oxford University Press, 1996.

Telecommunications Council (Japan): *Reforms towards the intellectually creative society*, Tokyo, MPT, 1994.

Thompson, J.: *Organizations in action*, New York, McGraw-Hill, 1967.

Toffler A.: *The third wave*, New York, William Morrow, 1980.

Venkataraman N.: *Information technology and organizational transformation*, Oxford, Oxford University Press, 1971.

Vickers G.: *The art of judgement. A study of policy making*, London, Chapman and Hall, 1965.

Wajcman, J.: *The social shaping of technology. How the refrigerator got its hum*, Milton Keynes, Open University Press, 1985.

Walsh K.: *Public services and market mechanisms. Competition, contracting and the new public management*, Basingstoke, MacMillan, 1995.

Waterman, R.H.: *In search of excellence: lessons from America's bestrun companies*, New York, Harper and Row, 1982.

Webster J.: *Gender employment and information technology*, Harlow, Longman, 1996.

Williams F.: *The coming of the new telecommunications structure for the information age*, New York, Free Press, 1991.

Wilson. D.: *The case for freedom of information in Britain today*, London, Heinemann, 1984.

Yarrow, SG: *Privatization and the natural monopolies*, London, Public Policy Centre, 1985.

Yattes J-A: *Control through communications*, Baltimore, John Hopkins University Press, 1989.

Zuboff S.: *In the age of the smart machine. The future of work and power*. Oxford, Heinemann, 1988.

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