

E-Government: Key Concepts and Applications to Development

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Pledge: I have neither given nor received unauthorized assistance while preparing this assignment and have written this code myself.

Abstract

One effect of new and expanding information and communication technology and the digital revolution is the reality and potential of ICT to increase the efficiency and effective of government. Another is demands on governments to be more receptive to the needs of citizens. Governments must become more participatory, lower barriers and costs for access, and become more responsive.

One way to do this is e-government – the use of information and communications technologies to transform government, to make it more efficient, effective, transparent and accountable. For developing countries and the development efforts they are pursuing, e-government will be particularly important, in development and in establishing good governance.

E-government involves many benefits that strengthen the function of government, but also involves issues that call for new ways of governing. For developing countries, the potentials are particularly significant, but so are the issues. An additional concern developing country governments must face is reconciling e-government and the digital divide.

Introduction

Among the many effects of new and expanding information and communication technology and the digital revolution is the reality and potential of ICT to increase the efficiency and effective of government, and making governments more responsive to the needs of their citizens. This is e-government – the use of information and communications technologies transform government to make more efficient, effective, transparent and accountable.

Many countries around the world already are moving to institute e-government as central in public sector operations. However, e-government is not a tool limited to the developed countries and those with established ICT infrastructure and networks. There is great potential for ICT and e-government in the socioeconomic development processes of developing countries. Many opportunities exist for the innovative uses of the Internet and other technologies, to streamline government and connect it more closely with the people it is supposed to serve. Around the world, significant resources are being mobilized to develop, implement and promote the use of e-government, and many new possibilities are being explored.

In the current and emerging world, the increasing importance of information and communication results in new expectations and demands with relation to government operations is ever more apparent. Governments will be required to respond to the challenge of broadening participation, increase access to information held by government and about how government operates, and lower barriers and cost of access. ICT and e-government is one central way in which governments can enhance public administration of the public sector and strengthen ways in which government is achieved.

This Paper

This paper outlines concepts of e-government, some of the goals and benefits embedded in the practice of e-government and ways e-government is being implemented, and some of the issues involved. The paper also examined e-government as an element in the process of development and some of the goals and benefits involved, as well as some of the challenges being encountered. Digital divide issues of e-government are discussed.

The paper concludes that e-government is a key factor in effective government in shaping public sector activities and processes, building relationships between citizens and government, enhancing transparency and accountability, and providing a key channel for citizen participation in government.

What is E-Government?

E-government describes the use of information and information and communication technology (ICT) to support the operations of government. E-government most often is associated with computer applications and the Internet and the World Wide Web, but also encompasses other ICT applications, such as cellular telephone, satellite communication and geographical information systems.

E-government is not a new concept, in that the business of government in most countries has for many years employed ICT, in communications, administrative systems, data gathering and storage, security and surveillance, and dissemination of information. However, emerging and expanding ICT applications are expanding the capacity and reach of government and offer many new opportunities and potentials for strengthened performance in the public sector.

In practice, “e-government” has several meanings. One narrow definition focuses only on Internet-applications inside government. This narrow definition sometimes is expanded to include the use of the Internet in restructuring government-citizen interactions and related political relationships. Another narrow view relates to e-government as the public sector equivalent of e-commerce and government-citizen transactions.

A broader definition looks at e-government as the use of ICT to strengthen government performance in areas such as more effective and more efficient provision of services, opening new channels for people to access government and official information, and making government more accountable to its citizens. This broad definition of e-government centers on tools and applications that can transform the ways government is practiced and the ways public administration reform and good governance goals can be met. In general, a broader view of e-government may be preferred, referring to overall strengthening of government-people relationships, in making internal government processes more efficient and effective, improving the delivery of public services, and expanding processes for democratic accountability and control, citizen participation, and collective decision-making.

E-government is separate from e-governance, the latter referring more specifically to how governments perform, in terms of measures such as meeting expectations, judging performance, and evaluating decision making. E-government also is not Internet governance, which refers to administration and regulation of the Internet.

E-government relates in many ways to, but is not completely the same as, e-democracy, which focuses on more-political issues such as equitable access to ICT, political communication through ICT, and concerns encompassed in the socioeconomic elements of digital divide.

Some Goals of E-Government

Government often is seen as inefficient and unresponsive in meeting citizen expectations; and citizens do not have an alternative to government. Increasingly, governments are working to overcome such circumstances through the application of e-government. In many places – globally, within regions and countries, and within government structures – government is beginning to take a more customer-oriented view, regarding citizens as clients and adopting values of consumer satisfaction. In many ways, this is a part of the on-line, 24/7 availability and response of business carrying over to citizens’ expectations of government. At the same time, government is realizing the efficiency, cost-effectiveness, and improved performance that comes with the ICT applications of e-government.

Again, a broad definition of e-government seeks governments becoming stronger and more effective in three main directions:

- Making internal administrative processes more efficient and effective
- Enhancing the delivery of public services
- Strengthening democratic accountability, control and collective decision making.

In employing and applying ICT processes and tools, e-government addresses some specific points that improve access to information and services and make government more accountable to citizens:

- Citizens as clients and customers – effective delivery of public goods and services to citizens without the interventions and inconveniences of traditional bureaucratic and administrative systems
- Strengthened governance – providing improved access to information and to the systems and structures that constitute government, particularly for marginalized and disadvantaged segments of a citizenry that most need the benefits and protections government provides
- Broadened public participation – expanded and more accessible opportunities for the direct participation of all citizens, from all segments of the population, for them to be more actively involved in the policy and decision making processes of government, again, particularly the marginalized and disadvantaged segments of a citizenry, which most often have the fewest opportunities to participate
- Improved public sector productivity and efficiency – more effective delivery of services, greater productivity of bureaucratic and administrative systems, and more efficient performance cost-wise
- Greater support for private sector performance – government also works with and provides services to business; benefits of e-governance for the private sector include streamlined bureaucracy and administration, more immediate and efficient delivery of benefits and services, and better performance of government as a customer.

Some Specific Applications of E-Government

In general, e-government has had significant impact in four specific areas of government operations:

- Government to citizen – e-government facilitates processes for citizens to communicate with government and exchange information, access government services and benefits, and interact with regulatory and licensing agencies; ICT establishes multiple channels and enables citizens' remote and distributed access to government and government processes overall
- Government to business – e-government eases business' access to the bureaucratic and regulatory processes of government, as subjects of government or as vendors, lowering transaction costs, shortening time involved, and increasing efficiency, on both sides of the transaction
- Government to government – transactions within government relate to the transactions between the many units of government at national, regional and local levels, as well as transactions with foreign governments; electronic communication tools can allow government entities to communicate more

quickly and effectively and more easily share resources and information and data, through faster, more efficient, more effective processes.

- Intragovernment – ICT can improve the relationships and processes within individual government entities; ICT can improve the way government does its basic business, managing processes more effectively and efficiently through electronic best practices; ICT has direct applications in processes such as human resource management and information and knowledge management.

Issues in E-Government

While adoption of ICT in government processes and moving toward e-government carries a number of benefits, several significant issues emerge as well.

Privacy and Security. Privacy and security of information is a priority issue. ICT offers unprecedented opportunities to gather and store data and information about citizens. Comprehensive and detailed information profiles can accumulate, which can be easily accessed, analyzed, merged and shared. Confidential information about individuals and aspects of individuals' lives is routinely exchanged through channels such as the Internet, by individuals themselves and by others, official and private sector. Such information can include financial information, criminal records, personal life information, and political preferences. Devising and implementing clear and effective measures for data security and protection of privacy is critical and indispensable. Such measures would prevent a government big-brother scenario as well as unauthorized parties gaining access to secure information.

It is likely that citizens would actively accept communication of sensitive information through electronic channels only when they are confident that communication infrastructure and networks are reliable and secure. At the same time, information security becomes a concern of government as government processes move online, putting the functioning of government and its systems at potential risk, including potential exposure of sensitive and confidential government information and data.

Privacy and security of information will become ever more important as more and more government processes become electronic and as e-government moves toward integrated, seamless ICT systems, locally and globally.

Information Management. As e-government progresses, managing "content" become an increasingly important issue. As ICT systems increase effectiveness in gathering and storing data and information, attention is required as to the actual nature of information and data, and processes for its actual capture, processing, exchange and application. In many respects, government is an information and knowledge industry, information and data is a resource, and government employees are information and knowledge workers. Sound information and knowledge management strategies are needed to ensure that information and knowledge resources and information and knowledge skills are managed appropriately and effectively.

The many dimensions of the information and knowledge that government possesses must be considered with regard to the types of information governments possess, such as that employed in basic government functions and in operating administrative systems; in policy and decision making; and in providing services and

benefits to citizens. Basic issues of compatibility and interoperability within and between and within government units must be a consideration.

Citizen Participation. E-participation must be a consideration in e-government – engaging citizens in government not merely as customers of agencies or consumers of services, but as clients and constituents of government entities. E-government offers expanded opportunities for strengthening relationships between government and citizens and for citizens to become engaged in the formulation and implementation of public policy and public services.

E-government can establish new electronic mechanisms through which citizens can comment in the development of policy, and provide input and feedback related to provision of government services. Online communication, such as online polls and surveys, consultation facilities, and bulletin boards and discussion groups are some obvious possibilities. In efforts to strengthen government and improve the relevance and quality of government processes and services, a central purpose in e-government, citizen participation and the ability of citizens to interact with government is key.

Intra-Government Communication. Government becoming more efficient and effective in the ways it communicates within is critical in efforts to improve and strengthen government, and would be a key focus of establishing e-government. Integration of government units and networking in government toward seamless integration of processes and service provision would be an objective of e-government. As governments move toward implementing e-government practices, modalities for achieving networks would require significant attention. An ideal of collective government and an open, interactive, multidisciplinary and collaborative government style obviously would require significant resources as well as major changes and reform in the practice of government.

E-Government and Development

E-government has huge potential in contributing to social and economic development efforts in developing countries around the world. Beyond helping developing country governments become more efficient, accountable, transparent and responsive to the needs of their citizens, direct positives include cost effectiveness in government and public operations, significant savings in areas such as public work and public procurement, and enhanced and more continuous contact with citizens, particularly people living in remote and less densely populated areas. Effects include greater transparency and accountability in decision making and political processes, more ways to fight corruption, and stimulation of nation building, cultural development and democratic process.

While e-government offers new directions and potentials for establishing government that establishes conditions that support development and deliver better development outcomes, evidence is that experiences with e-government in development have been uneven across countries. In some cases, a lack of understanding of e-government or a lack of trust of or commitment to e-government processes is an explanation. In some cases, lack of availability of technology and resources to support adoption of e-government is a significant factor.

Several specific aspects of e-government and development warrant attention:

Development Effectiveness. It is widely accepted that the impact of e-government in its basic application is simply better government. E-government helps support higher quality provision of services, expanded engagement with citizens, and better policy outcomes. As noted, e-government initiatives can focus attention on broader issues of government, such as how collaboration across agencies can be made more effective; how to address complex, shared problems of administration and delivery; how to strengthen a focus of service to citizens; and how to build relationships with private sector partners.

Increased attention is being directed to the potential for e-government in the role it can play in effecting economic change, productive capacity improvement, more equitable social environments, and enhanced international competitiveness. ICT offers potential powerful enabling tools that can be used in addressing and overcoming some of the fundamental constraints and barriers for basic development, for sustained economic and social development, and for entering global systems. There is evidence of a strong positive relationship between ICT investment and GDP growth, illustrating the importance of investment in and application of ICT for development in both the public and commercial sectors.

It has long been recognized that ICT offers channels and new potentials to network, interact and communicate across the world. It is being suggested that countries which are slow to embrace and apply ICT tools for development and for entering the global network will encounter significant relative disadvantages that could maintain or widen gaps in economic status and economic competitiveness. An emerging term is “information poverty.” In some countries, a widening of the digital divide and failing to keep pace with emerging global communication trends is seen as a development risk.

Benefits of e-government in concept are the same for both developed and developing countries. It has been suggested that differences in adopting e-government and the more limited use of e-government in developing countries is a combination of opportunities not recognized in developing countries and particular challenges that are encountered (Allen et al, 2001; Ndou, 2004). Realizing e-government opportunities in developing countries include meeting and overcoming challenges.

Cost Reductions and Efficiency Gains. Just as ICT has considerable potential for achieving cost reductions and efficiency gains in information gathering, processing, storage and retrieval for the private sector in developing economies, governments in developing countries can realize the same benefits. Converting many information-based processes and services to digital and online decreases processing costs, inefficiencies, errors, and constraints to sharing, and saves time. Efficiencies attained by conversion to electronic processes enables faster and more informed decision making.

Many developing country governments have vested interests in maintaining traditional paper-based, labor-intensive systems, for social, economic, political and other reasons, independent from concern for effective and efficient government, sometimes based in the personal interests of government officials. Difficult decisions would be involved in moving away from these traditional systems and to ICT.

Quality of Service Delivery to Citizens and Businesses. In the traditional model of public service delivery in many developing countries, procedures are long and time consuming, and often lack transparency. Likewise, a business wishing to obtain a license or permit often must complete a number of application forms manually, visit a

number of different offices, and devote large amounts of time to the process. A citizen wishing to obtain certificates and records and other official documents similarly must manually complete request forms, make personal visits to multiple offices, and again devote significant time to the process. Consequences are lost productivity for businesses and workers making requests, significant costs, and high degrees of dissatisfaction. E-government processes, in contrast, offer around the clock access from distant locations, reduced bureaucracy, faster and more convenient transactions, lower transaction costs for applicants, and improved quality of service.

Again, many developing country governments have vested interests in maintaining traditional systems, for a variety of reasons. Difficult decisions, possibly unpopular in some quarters of government, would be required. Progressive leadership and a broader view of the responsibility and accountability of government likely would be an important consideration.

Transparency, Accountability and Anticorruption. Through neutral digital systems, e-government often can help expand transparency and accountability in bureaucratic, administrative and decision making processes. E-government systems can offer opportunities for citizens to contribute to or participate directly in decision making, through objective channels for input of opinions, suggestions and ideas. Similarly, e-government systems can provide opportunities for citizens to obtain, review and react to government information, rules and policies. Personal visits to paper-based information resources centers can be replaced with online resource centers. The availability of information, documents and publications involved in the conduct of public administration, as well as the information, documents and publications of political processes, would similarly increase levels of transparency in public sector processes. The “sunshine” aspect of access to public information is well recognized as a deterrent, and an antidote, to public sector corruption.

Again, many governments, and the bureaucratic and administrative functions of government, often have vested interests in avoiding easy public access to public information, sometimes based in traditional ways in which public sector processes are executed, sometimes based in personal interests of the individuals involved. Once more, progressive and enlightened leadership and a broader view of the responsibility and accountability of government likely would be an important consideration.

Increasing the Capacity of Government. The use of ICT to reorganize internal government capacity for bureaucratic and administrative transactions, communication, maintaining interrelationships, and the exchange of data and information offers considerable opportunity to expand government capacity. Network or Internet systems allow distributed offices and units to share data bases and other common information and to more easily share and coordinate human resources in dealing with data and information and in analysis and problem solving. ICT facilities allow faster information flow and exchange information required in executing bureaucratic and administrative processes and decision making. Increased efficiency results in increased effectiveness and lower costs.

Expanding the capacity of government through commitment to electronic systems requires a broad view of the function of government as well as the systems and processes that support these functions, a view not always apparent in an insular or self-interested public sector infrastructure. Commitment to ICT toward increasing capacity of

government requires longer-term planning and resource commitments, sometimes even for the short term, often a constraint many developing country governments must overcome.

Networks and Community Creation. ICT creates opportunities for the creation of community networks – networks in the structured sense, and networks in the social sense.

The very nature of government and its effective conduct in any case requires the notion of network in that skills, technologies, information, knowledge and the participation of people must be brought together, across separate government units, and across society. The comprehensive provision of services – to citizens, businesses, to employees and staff within government, and so on – requires the cooperation and collaboration of many agencies, integrated horizontally and vertically. ICT is a tool that can make this network aspect of government become a reality.

At the same time, as nations and societies develop, the networking function of ICT becomes more important, on a business level and on the social level. On the business level, networking is a foundation of economic interaction and expansion. An important aspect of networking would be its use toward cultural development and nation building.

Closed, insular or self-interested governments and government agencies and bureaucracies are an opposite to the expanding networks that emerge with social development, and particularly with ICT development. As networks develop, government must respond. Unresponsive, distant or elite government must give way to community creation and networks and openness that gives citizens and businesses the opportunities and possibilities to participate in decision making processes, and active contribution to government and political processes.

Improved Quality of Decision Making. The quality of decision making in the public sector can be improved with continuous interaction and communication between government and its citizens; ICT and e-government can be central in this process. By means of active participation in government and political discussions, citizens – the people affected – can provide input, ideas, knowledge and information that serve their interests. This in turn would lead to more appropriate decisions and outcomes, followed by increased trust in government and stronger government-citizen relationships. Regarding citizens as the customers of government and the key stakeholders in the outcomes of government and political processes, and listening and understanding citizen needs and requirements is essential in appropriate decisions being reached.

Again, closed, insular or self-interested government is opposite to the end of recognizing and meeting citizen needs. Attitudes that perpetuate government isolation must give way to greater receptiveness and openness, with the potentials and possibilities of ICT and e-government being recognized and embraced.

Government as a Leader in ICT Adoption. Recognition, acceptance and adoption of ICT in government processes would contribute to the creation and awareness of the potential contributions of ICT in other aspects of development, within the civil sector and in the private sector. Through e-government, government can lead the way in a vital role of facilitating market-led initiatives and in implementing a process of capacity building.

Such a leadership role would require government overcoming and moving past any resistance to adoption of ICT in its bureaucratic, administrative and political processes, as well as creating policy and infrastructure environments favorable and supportive to the development of ICT and its adoption. One very visible and positive contribution would be the demonstration effect of adoption of e-government and ICT in government operations.

Challenges to Adopting and Implement E-Government

A number of challenges exist to the adoption of e-government in development efforts despite the evidence of ICT as an important force in economic and social development.

Creation of ICT Infrastructure. Creating the infrastructure to support ICT development is a major challenge governments must face. As a conceptual foundation, policy architecture must be developed and set in place, including sets of goals, objectives, guiding principles, models and standards.

The development of basic physical infrastructure necessary to support ICT and capture the advantages of its features and tools is necessary for wide adoption and use, to promote ICT overall, in government and the adoption of e-government. In promoting ICT, it would be necessary to support all aspects of ICT – computers and the Internet, as well as cellular telephone, satellite communication, community communication kiosks for persons without physical or financial access, and so on. Education also would be a critical aspect of promoting ICT and applications such as e-government. ICT literacy and e-readiness would be necessary for people to be able to use and benefit from ICT and applications such as e-government. A presumption is that with higher levels of familiarity and training, and greater access, people would be more likely to pursue the opportunities and benefits of ICT.

A Supportive Policy Environment. Beyond policy that addresses the technical infrastructure of ICT, policy also must address legal issues such as data and information protection, e-commerce, censorship, and freedom of speech, as well as international issues such as cross-border regulation, copyright and intellectual property. Most commercial ICT arrangements will involve international contracts. In many developing countries, basic legislation may not be in place, and enforcement of existing laws and regulations may be weak.

Human Capital. A major challenge for ICT development and specific initiatives to be undertaken is lack of local ICT skills. ICT development and e-government requires a focused skills blend of technical, commercial, administrative and management knowledge. This is a particular problem in developing countries, where a lack of trained and qualified persons can be a fundamental issue, possibly exacerbated by out-migration of qualified persons to more attractive employment opportunities in other countries.

To address human capital development issues, knowledge management and training initiatives must address the developing and maintaining required skill levels, particularly with respect to e-government, where such skills development may not be a priority. In the e-government context, consideration also must be given to retaining trained and skilled human resources, again movement to more attractive employment in the private sector or abroad.

Change Management. Change management is an issue in the public sector in general, particularly in the setting of established bureaucracies and administrative and political processes. Change management issues must be addressed in the context of new work processes, new ways of approaching tasks, and new conceptualization of roles and responsibilities. Organizational culture would be an issue and strategic organization change must be approached in appropriate ways. Addressing resistance successfully would require creation of incentives for organizations and individuals to learn and change and well-designed strategies and plans that embrace participation of those organizations and individuals affected.

Partnerships and Collaboration. As e-government is a process that, to be successful, must be integrated throughout an organizational structure, both horizontally and vertically, collaboration and cooperation at all levels and across levels is important. Often, organization collaboration and cooperation is a value not present in the public sector, and governments and their units may exhibit resistant to new open and transparent systems that require specific accountability and that work to challenge previously existing authority, power and hierarchical status. As well, citizens often have an established mistrust of government, for many reasons.

To ensure cooperation, collaboration and trust in e-government initiatives, focused, well-designed strategies, approaches and initiatives must be put in place. Cooperation and collaboration between the public and private sectors would be needed as well, to ensure availability of resources, skills and capabilities that the public sector may lack.

Strategy. A major challenge for new e-government initiatives will be establishing an appropriate strategy that considers and accounts for the local environment and context. Strategy must be long-range and comprehensive, with a view to benefits that can be realized, obstacles to be overcome, realities to be encountered, and resources required. A broad e-government strategy is in many ways a re-engineering of what exists – no simple task, that involves high risk, major challenges and high costs. Effective planning and leadership would be required before, during and after any kind of project implementation.

Often, adoption of e-government solutions will lag behind advances in technology. Technology developments move quickly, and without careful planning, forecasting and anticipation, decisions quickly may become adverse. As well, developments in abuse of new systems may outpace positive applications. Approaches to adopting or adapting technology would require appropriate policy, regulatory and legal frameworks, flexibility and a view to performance rather than specification, and views toward both internal and external cooperation and standardization.

E-Government and the Digital Divide

The digital divide is an issue at the center of e-government and development. Access to electronic resources is hugely uneven around the world and within countries. Economic status, race, ethnicity, geography and availability of infrastructure are some of the factors contributing to the digital divide – and the socioeconomic divide – in the developing world. Illiteracy and linguistic diversity are factors as well. Lack of access to online facilities and digital communication technology leads to many population segments being excluded and disenfranchised from the processes and benefits of social and economic development.

However, bridging the digital divide is more than simply addressing issues of access to information and communication technology and e-literacy. In incorporating e-government in development efforts, fundamental changes in the ways governments relate to their people are required. In tandem with improving economic productivity and efficiency and the delivery of services, basic issues such as strengthening good governance and broadening public participation must be priorities. E-government is an important element supporting development, but in itself is not a condition of development.

A concept emerging from e-government and the digital divide is e-inclusion. E-inclusion addresses working within the integration of technology advances, the role of government and human development. E-inclusion sees a need to align development thinking with a paradigm of socially inclusive development based in extending the benefits of ICT-led growth and development to all.

The cornerstone of e-inclusion is a focus on reduction of inequality of opportunity. Moving beyond a focus on connectivity and access, the concept emphasizes diversification of the ICT base, such that even those without connectivity and access are systematically included in realizing the overall base of expanding benefits resulting from new technology. Equal participation is reached through the lowering of the political, economic, technological and social barriers that currently block equal participation and equal benefit. E-inclusion promotes economic and social empowerment of all citizens.

Digital divide issues must be addressed, whether related to access to technology, or access to benefits. Without broad access, the full impact and benefit of e-government cannot be realized. It often is the case that the most disadvantaged segments of society have the lowest levels of access to technology, yet also some of the highest levels of dependence on and interaction with government and the potential for the greatest increases in benefit realized.

Conclusion

Effective operation of government and the public sector is critical for any country. Toward this end, ICT and application such as the Internet have changed the ways governments and citizens interact and will interact into the future. E-government is not a solution to improved government, but indeed is one important element. As the potentials, as well as realities, of ICT in improving government performance become apparent, it is important to assess the directions e-government may take – as well as select those policies that can help potentials and realities being realized. However, it also is important to realize that e-government is not without issues; e-government will be successful only when effective and appropriate policy decisions are made, and when citizens trust both governments and e-government provisions that are put in place.

Given needs that exist and potentials that may not have yet been realized, developing countries must pursue a more active role in the formulation of national policies and strategies that promote the information economy in general, and e-government in particular; e-government can facilitate development in creating an appropriate and positive environment. The many issues and obstacles that exist must be addressed such that the benefits of both ICT and e-government can be established.

At its best, e-government represents the free flow of information and develops opportunities, new relationships, and a common government-citizen view. Implementation of e-government will be affected by many factors – structural, cultural, political and financial – but is emerging as a key concern in public administration.

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