E-government in Public Sector: Policy Implications and Recommendations for Policy-makers

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Abstract
Electronic government application with special reference to IT components lies at the heart of any management process to build the interface between the government and its people. With the growing complexity of modern organizations, not to speak of the systems in public sector, information technology is playing greater role in providing integration, coordination and also in building the interface between the government and the people in society. In the light of this, the paper examines the application of electronic government in public sector broad wide. It then focuses on some positive and negative implications that ICT usage in public sector may pose to policy makers in the developing countries. The paper begins by conceptualization of the e-government and the driving forces that spearhead the application of e-government in public sector. It goes on to discuss the core areas of e-government interfaces with references to structural dimensions of e-government application. The paper identifies and discusses some implications in the e-government application in public organizations. Finally, it puts forward some recommendations in the implementation of e-government and overcoming some of the negative implications associated with it uses in public sector.

Keywords: Electronic government, public sector, policy, information technology, privacy, security.

Introduction
For any country to survive and prosper in this competitive global economy, it must manage its human, capital and material resources both efficiently and effectively. The world is moving towards more democratic and open forms of governance. Hence, governments are under increasing pressure to improve managerial performance of their public organizations and services. The emergence of the internet and the concerns for development in processing capacity as well as data storage over the 1990s has significantly altered the environment for ICT usage and application across society and governmental institutions or agencies for that matters. However, while the long-term effects of this digital revolution are likely to be profound, the needs for development have drastically pressurized the public sector to improve performances, capitalize on external opportunities within the environment and prepare to overcome both internal weaknesses as well as external threats that could endanger it services towards the people.
Conceptualizing E-government
Due to differences in ideological lens and/or perception of individuals, e-government means different things to different people. According to Barr (2001), e-government is “the use of Internet technology and protocols to transform agency effectiveness, efficiency, and service quality” (p.2). Put it differently, Gartner Group (2000) describes e-government as “the continuous optimization of service delivery, constituency participation and governance by transforming internal and external relationships through technology, the Internet and new media” (p.2). While Detlor and Finn (2002) have defined electronic government as “the delivery and administration of government products and services over an information technology infrastructure” (p.101), Gronlund (2002) stated “eGov generally refers certainly to more use of IT, but more importantly to attempts to achieve more strategic use of IT in public sector” (p.1). In a more comprehensive way, Kieley, et al, (2002) defined electronic government as “an IT-led reconfiguration of public sector governance-and how knowledge, power and purpose are redistributed in light of new technological realities,” (p.34). In this paper, electronic government is defined as the use of information and communications technology (ICT) to promote more efficient and cost-effective government, facilitate more convenient government services, allow greater public access to information and make government more accountable to its citizens.

Driving Force of Information-Society to E-government
The advent of Information Society (IS) is creating unprecedented conditions for access to, and exploitation of public sector information. It represents a potential turning point in the ways in which societies are governed, administered as well as new way of delivering services to the people. In other words, Information and Communication Technologies can be argued to be a driving force and a powerful tool to help achieve the Millennium’s developmental goals. Indeed, the Millennium declaration and its road map to globalization campaigns have called on governments to pursue a strategic-management through a knowledge infrastructure, particularly ICTs, via a creative partnership with private sector. In fact, the mainstream of ICT within planning and design of improving strategies in public sector is pivotal, both at national, local and regional levels of government administrative bodies. Hence, e-government becomes a particularly important ICT application in the public sector for better service delivery system.

More importantly, the “World Summit on the Information Society”, which took place in Geneva by December 2003 and Tunis 2005, has pointed out the international community’s readiness to improve initiatives that enhance the role of ICT for political, cultural and economic development in various countries all over the world. The summit specifically explored the best practices in new ICT-based for modes of interaction between government and its citizens. As such, e-government can be considered a process, or a means to an end, rather than an end in itself. Applications of e-government in public sector are still in the earliest stages of development and it promises to evolve with advances in technology and/or increased acceptance by the people with an element of trust in electronic communication.

Structural Dimensions of E-government in Public Sector
The conceptual section of this paper provides the basis for structural dimensions of application of e-Government in public organizations. Some analysts sought e-government in terms of specific course of action to enhance job information. Others have broadly perceived e-government, in its structure, as automating the delivery of government services to people. In other words, e-government is structurally seen as a means to enable citizens interact and receive services from the federal government, state and local governments more efficiently and costs cutting.

On the basis of this structural understanding, one can identify three distinctive areas for application of e-government in public sector. First, e-government application can be from government
to government, second, from government to business, and third, from government to citizens as depicted in the figure 1. Some analysts and readers of this paper may raise another dimension such as from government to employee. However, the paper does not lose sight on that dimension, but is considered to be a subset or intra-agency activities of the government to government interface. Hence, it is not addressed as separate entity in this paper.

**Figure 1: Structural Dimensions of e-Government Applications**

![Diagram of Structural Dimensions of e-Government Applications](image)

**Operationalizing Structural Dimensions of Applications**

Government to government (G2G) dimension application represents the cornerstone of e-government. In fact, it has been argued by Atkinson and Ulevich (2000) that federal, state and local governments should enhance their own internal systems and procedures before embarking on electronic transactions with both citizens and business communities could be successful. There are three levels of initiative forces that call for the application of government to government dimension of e-government. First, in relations to laws and government regulations the growing emphasis is on paperwork reduction in order to reduce the information collection efforts and reporting requirements of the federal government as well as to make coordination of government-wide information management activities easier. Second, the interest to oversight an improved efficiency, cost savings by increasing the speed of transactions, reducing the number of personnel necessary to complete a task and improving the consistency of outputs necessitate G2G e-government (Trattner, 2000). Third, according to Sprehe (2001), an attempt to apply ‘best practices’ in public sector, just as in private sector, make it becomes imperative for government to government electronic initiatives. He contends that state and local governments are often perceived as models for e-government initiatives due to their role in delivering better services to citizens. As such, most of the policy-makers are now advocating for best approach to restructuring government-government relationships. In this context, e-government is often proposed as solution. A glaring example of government to government application of e-government is the Northeast Gang Information System (NEGIS) in US. NEGIS is sponsored by Department of Justice and Services as a shared resource for street gang information for states in the northeast such as Rhode Island, Vermont and New York. NEGIS covers information on gang related activities, gang intelligence and even reference library. Hence, it connects state police departments of the participant-states, which in turns transmit the information to the states law enforcement agencies (see: NIJ, 2000).

Another structural dimension of e-government application in public sector is the building of interface between government and business sector (G2B) of a nation’s economy. According to Gilbert (2001), government to business initiatives receive a significant amount of attention in part because of the high enthusiasm of the business sector and the potential for reducing costs through improved
procurement practices and increased competitions. This dimension of e-government can reflect information about the sale of surplus government goods to the public as well as procurement of goods and services for public awareness. Although not all are directly dependent on the use of information technology, however, *performance-based contracting* is a sound electronic method in which the payment that governments made to the contractors can be based on the actual goals and outcomes of the job done and the articulated efforts put in. Another government to business electronic method is *Share-in-Savings contracts*. This is a method in which the contractor pays for the up-front costs of a project, such as installation of a new computer system and receives payment passed on the savings generated (see: Langolois, 2001). The third e-government application to government-business interface is a *reverse auction* method that can be conducted over Internet. This method allows companies to openly make biddings against each other in real time to win a government contract. The main objective of this method is to drive prices down to market or below market levels. Hence, in a situation where major emphases are on price, reverse auctions are the best-suited for both quality and expected performance in public sector transactions, as these are usually clear and easily assessed (Langolois, 2001).

Generally, there are two primary motives for application of e-government in building the interface between government and business sector of any country. The first rationale and/or motive is the business community itself, whereby the use of electronic means to carry out various activities like procurement, sales and hiring can become an easy task for state industries. In addition, many companies would like to extend the cost savings realized in their business-to-business transactions to their business with federal, state and local governments. The second motive is the growing demand by policy-makers for cost cutting and more efficient procurement as highlighted earlier. The fact is that the government to business e-government initiatives is promoted on the potential to streamline and improve the consistency of personnel-intensive tasks, such as processing license renewals or employee benefit changes as in the case of the Malaysian government proposal for e-government (see: MAMPU, 1997).

In practice, one-stop example of government-to-business e-government application is Government Services Administration Auctions (GSA) where GSA sells federal surplus property via online Web site to the highest bidders. The items sold to industrial machinery and vehicles range from hand tools to furniture. Another government-to-business initiative administered by GSA Federal Technology Service (FTS) is Buyers.gov. It is a business auction site that facilitates the purchase of information technology products by federal government agencies through the use of reverse auctions and aggregating demand for commonly purchased products (see: http://www.buyers.gov).

The third application of e-government in public organization is to build interface between government and its citizens. It is a realistic initiative to facilitate citizen interaction with the government. As a public organization that is responsible for the needs of the people, government-to-citizen electronic application can provide transactions relating to renewing of licenses and certifications, tax-payments, applying for certain benefits by the citizens, such as government loans or houses in a lesser time consuming and easiness in carrying out the process (Ambali, 2009). More importantly, this structural dimension strives to enhance citizen access to public information through the use of dissemination tools like web sites and/or kiosks. In other words, it is a dimension purposefully meant to attenuate the agency-centric, and at times, process-laden nature of some government functions towards its citizens. In the same line of argument, some e-government advocates suggest that one of the goals of implementing this dimension is to create a “one-stop shopping” site where citizens can carry out a variety of tasks, especially those that involve multiple agencies, without requiring the citizen to initiate contacts with each agency individually (Hasson, 2000; William, 2001). Another potential outcome from this dimension is that it may also enhance citizen-to-citizen interaction and increase their participations in government with more opportunities to overcome possible time consuming and geographical barriers among them.
The growing younger citizen demand is one of the driving motives for establishing this dimension by any administrative institutions of government around the world. In fact e-government application in public sector is expected to increase significantly in Asia within the next decade as the youths, who are now growing up with personal computers and the Internet as routinely useful tool in their lives, become adults. Another pressing factor for application of e-government in building government-citizen interface is time frame. The citizens are demanding for ways to reduce time spent standing and queuing up in administrative departments for permits or any kinds of transactions. Although, this dimension is yet to be developed or fully grown in Asia however, one can find a good example named FirstGov Web site in US and many other developed countries. The FirstGov Web site was established in September 2000 purposely for public-private partnership to serve as online portal and foster transactions, exchange of ideas among them. It contains about 51 million pages of government information and services through online transactions (see: http://www.firstgov.gov).

**Overall Rationales for E-government Applications**

One of the overarching rationales for e-government application in public sectors is improved efficiency. In applying e-government, the efficiency can take different forms. For example, one form is to reduce errors and improve consistency of outcomes of governmental projects through automating standard tasks. The second form of efficiency improvement is to reduce costs and the many layers of organizational processes (the popular bureaucracy) by streamline operating procedures through e-applications. Part of efficiency improvement is reduction in time spent on repetitive tasks. According to Breen (2000), this will give the federal, state and local government employees ample opportunity to develop new skills and advance their carriers.

Application of e-government in public sector provides opportunity and benefit to improve quality and accessibility of services to the citizens. In addition to efficiency enhancement, the quality of services may improve via quicker transactions, accountability and fast/better process in services delivery. The evolution of e-government can also create potential for new services. Another potential rationale is to contribute to a qualitative change in how government agencies handle business functions and how citizens interact with their governments as has been highlighted earlier in the structural section discussed. In addition, the application e-government is to increase citizen participations in government activities, where citizens in remote areas can be easily connected through establishment of ‘one-stop’ flagship center to send and receive information more instantly from the government agencies and institutional bodies. Hence, application of e-government in public sector allows is to provide opportunities for people with similar interests, opinions and concerns that may be geographically separated, to interact and share information affecting their daily lives and the country at large.

Generally, it is highly believed that no managerial reform can be materialized unless it is supported by ICT to improve effectiveness and efficiency of personnel management, procurements and many other government activities. Kaboolian (1988) argued that “the opportunities presented by e-government for improved administration, among other things, are leading to a global convergence toward a standard reform model” (p.190) in public sector. In the same line of argument for, Landsbergen and Wolken (2001) have also pointed out that ICT-enabled reforms can yield many benefits, including lower administrative costs, faster and more accurate response to requests and queries of the citizen, especially after the normal office hours. It will also lead to direct access to transaction or customer accounts held in different parts of government institutions. More so, e-government provides basis for ability to harvest data from operational systems, thus increasing the quality of feedback to manager and policymakers. However, the benefit can only be materialized if difference offices and people are willing to share information with common mutual interests.
Policy Implications for Policy-makers: Evidence from Asia

Positive Implications

Network application, as envisaged in government agencies, typically supports basic administrative functions relating to payroll and accounts. Adopting such systems can deliver significant benefits such as reduction of information handling and compliance costs. The net savings can also be realized from reduced labour costs and a speed up in processing of tasks. Network application can enhance integration of all departments and functions across public assets with one single computer system that can serve the needs of different departments. A living evidence of network application in government agencies in Asia context is Computer Crime Investigation Department (CCID) established in 2000 by the Republic of Korea Supreme Prosecutor’s Office and the Seoul District Prosecutor’s Office. This enables the prosecution of offences that become more technological in nature easier to deal with (Paek, 2000).

In Pakistan, ICT systems have been introduced into entire tax department and has help reduced contact between tax collectors and taxpayers (Maqbool, 2000). According to Parry (1997), effective application of e-government is the new financial management systems designed for Sri Lanka government as a way to offer an attractive networking environment. The new systems provide opportunities to the public sector to effectively handle different financial managements, such as treasury cash management, human resources management relating to payroll and records management within a one-stop computer system. Initially, the systems used to be a client-based, but the latest versions are increasingly Internet-based with the application of network system that allows information to be accessed independently by anyone at anywhere in the country.

Another positive implication is the management of workflow in relation to inter-organization policy implication. In other words, e-government application in public sector provides opportunities to manage workflow. Workflow refers to the ability to move images, files and documents from one workstation to another. This may include authorization, data entry, and data editing. Hence, transaction procedures that are used to be accomplished by moving papers can now be electronically managed in government agencies. This help solves the problem of delay often associated with paper hard-copy documents and manual processing. The workflow systems also entail claims processing and management, bid and proposal routine, and tracking (Ambali, 2009).

Other positive implication include the ability provide by e-government application to government agencies in handling people complaints, grant and scholarship award, as well as human resource recruitments and/or hiring matters. A glaring example is the National Tax Service Unit in the Republic of Korea. The unit has recently introduced a Tax Integrated system through a computerized system that accumulates tax-related information. This makes discriminative selection of taxpayers to be audited by tax officials reduced to some extent. Hence, a manual assessment of about 5 million cases on a yearly basis has been replaced by computer-assisted assessment. Thus, it closes all unnecessary face-to-face meetings between tax officials and taxpayers and helps eliminates unfair influences of tax officials in selecting taxpayers for audit (see: Sang-Yool Han, 2000). Another example is the Department of Budget and Management (DBM) in Philippines, which uses e-government application as a tool to post its major budgetary releases to government agencies on the Internet as well as makes transactions more transparent to the public. The online system contains information on government’s accounts payable and the amount released by the DBM. Thus, in part, not only it gives private contractors the ability to check the veracity of the department officials’ procurements against the DBM budgetary releases but also the details of all accounts payable and releases for each government agency can be accessed every month along the line with the names of the contractors and the amount of payment they are supposed to receive monthly (see: Republic of the Philippines, RA No 8760, DEC. 31, 2000).

More importantly, a positive implication for policy makers in the application of e-government in public sector is effective communication that enhances government-citizen interface. In other words,
e-government can be used to resolve the problem of communication gap between citizens and governments. For example, in India state of Andhra Pradesh, computer-aided Administration of Registration Department (CARD) is a successful e-government application pilot experiment to enhance the interface between government and the citizens. According to World Bank report, about 214 registration offices have completely computerized in Andhra Pradesh since 1998. This facilitates deeds registration in less than an hour, while services like issue of encumbrance and valuation certificates were accomplished in just about 15 minutes. Thus, the implication here is that it brings the opaqueness of property valuation that usually forces citizens to hire middlemen to an end. More importantly, the time frame which always consume by manual copying of documents and storage in paper forms have been replaced by computer-aided system and speed up the communication between government and its citizens (see: http://www1.worldbank). In Hong Kong, an estimated 65% of amenable government services delivery to citizen is available online (Office of the e-Envoy, 2000) and has yielded a substantive improvement. Thus electronic government applications in public sector is a potential tool to support the development of flexible and convenience ways for people to communicate and conduct business with their governments. In Asia, for example, the Philippines Custom Bureau has developed systems for custom payments, processing of clearance documents and releasing of shipments from custom control. The benefit is sought to minimize the chance of fraud and corruption that always arise from contact between business people, officials and messengers (see; Parayyno, 1999).

In addition, the Korea Republic Procurement service has developed an Electronic Data Interchange (EDI) to make the purchase of commodities where all accounting transactions can be easily executed. For example, cyber shopping is available for the procurement of office supplies, cultural products as well as cycled goods. In fact, the computerization of contract data and the use of automation to supply procurements are also underway. This is aimed at reducing opportunities for officers to make contact with customers or citizens for illegal objectives. Databases are being set up for the pre-qualification and cost accounting process as well as storing information of supply firms. The expected benefit, among other things, is that documents from contractors can be obtained using computer networks of relevant organizations rather than receiving such documents directly from contractors to prevent submission of false documents (Kang, 2000).

Negative Implications

The disparities in computer access or the so-called digital divide is a potential challenge and important implication for e-government applications in public sector. It serves as a potential barrier because the poor and lower income groups who do not have access to the Internet will be unable to benefit from online services provided by the governments. Hence, the inability of government to provide online service to all citizens may set-back e-government initiatives. Although, it is beyond a reasonable doubt that, in Asia region, a growing number of people have access to the Internet however, there are still huge numbers of people who do not. As such, advocates for the disabled have argued that computer can present new obstacles for citizens, ranging from the blind to physically impaired, who may require a very costly hardware or software (i.e., oral controls) for their computers to be able to access online information and services of the public sectors (see: The Economist, 2000; Ambali, 2009).

In another context, privacy issue poses a big challenge and potential negative implication to application of e-government in managerial activities of public sector. Citizens are unlikely to use e-government services without a solid guarantee of their privacy protection, which needs to be rigorously considered by policy makers in all aspects and dimensions of e-government applications. Various concerns about the issue of “cookies,” information sharing between agencies and the disclosure of citizens’ private information have become subjects of debate in society today (Ambali, 2009). Thus, privacy issue in e-government is a crucial challenge that needs to be addressed for successful application of e-government even in the developed countries including USA, let alone Asia and other developing countries around the globe. For example, in June 2000, it was reported that the National Drug Control Policy Office was using ‘cookies’ to track the Internet movement of visitors to its site.
(see: Smith, 2006; Schwartz and Harris, 2000). Such breach of privacy jeopardizes the citizens’ trust in government’s Web sites and Web-based services provided. In the context of Asia, one may argue that addressing the issue of privacy challenge for e-government application in public sector would require both technical and careful policy responses from policy-makers. However, the task is not easy as simply perceived by many writers and researchers.

Computer security is another underpinning challenge and negative implication for e-government application in public sector. This challenge is not only in Asia region but also throughout the globe. For example, in a series of evaluations conducted and published since July 1999, the General Accounting Office (GAO) in US has been repeatedly alerting that the largest federal agencies “were not adequately protecting critical federal operations and assets from computer-based attacks” (p.1). In the same line of argument, another report in year 2001 by GAO has identified six crucial areas of weakness in application of e-government. These include: security program management, access controls, software development and change controls, segregation of duties, operating systems control and service continuity (see: GAO, 2001). In other words, it can be inferred from such alert that effective service continuity in e-government application in public sector is not only for availability of services delivery, but also to build citizens’ confidence and/or trust in government institutions or agencies that data information disclosed by citizens are securely protected.

It is a common belief that the application of e-government in public sector will reduce opportunities for corruption, but the reality is more complex than thoughts. While ICT is sometimes facilitates ways to combat corruption in the administration of public sector, it can also provide new avenues for corruption opportunities for the officers. The implication needs to be considered by policy makers is that it can provide new sources of corrupt income, especially for ICT professionals while removing such opportunities from those without ICT skills. In addition, it should be admitted by Asia and global governments that computerization of records often closes down access to some administrative staff members but opens up access to others who operate the ICT systems in e-government applications. One may argue that, with application of e-government in public sector, corruption may increase or decrease depending on the relative integrity of the staff members and the officers. In other words, data quality and the myth of computer omnipotence have made many government agency leaders to believe that ICT totally removes opportunities for corruption, which is not and never a true story in practice. Yes ICT advances, like other technological changes, can improve the productivity potential and services delivery of public sector to meet the demands of the people, however, Olson (2000) pointed out that only the top management of e-government knows the actual productivity and services improvement obtained but the information may be shortfall in its totality for no reason. Hence, it is in the collective interest of the managers of public assets that service potential of the ICT advances are in many times underestimated by their superiors without really care for the public mass. In such cases, agencies may receive more resources than they need, which can in turn be used to increase the income or leisure of staff or management in public organizations. This form of corruption may be widely practiced in most centrally planned economies and therefore deserves an urgent attention of the e-government policy-makers to relook at.

**Recommendations for Policy Makers**

A common vision is an integral part of a successful e-government implementation in public sector. Common vision is essential to e-government as a means to manage and coordinate agency activities. A common vision is not a goal in itself, but a means to achieve the desired e-government objectives. A government-wide vision helps to tie e-government initiatives, in any country, with broader strategic reform objectives. It can promote inter-ministerial coordination, ensure balance and fairness and even help to stay and prosper the course of actions in service delivery to people forever. Having a clear vision of reforming public sector through application of e-government helps maintain consistency and a sense of purpose in public organizations. Towards this end, political leaders, government agency and
administrators must be key supporters of e-government common vision. Political leadership serves to diffuse the vision and give it added weight. While a clear vision statement is needed, however, it is not enough. The vision rationale and the validation for better change in public sector also need to be communicated across the government administrations that are implementing e-government.

The nature of e-government requires a level of cooperative action to ensure interoperability, avoid duplication, ensure coherent action in a range of crucial areas, such as security, privacy protection, and to provide the framework and capacity for adequate service delivery to people in public originations. The need for proper coordination among government agencies becomes more pressing as global governments increasingly move to implement more complex transaction services. There is a central-dilemma for e-government success. A generic problem is how effective results and autonomous operation can be retained while at the same time ensuring the interests of government administration at large in various questions pertaining to interoperable systems and shared use of information resources. While this reflects a broader issue for proper coordination versus devolved management responsibility, if e-government is to succeed it is crucial to offer a balance sight to effective coordination system.

Lack of proper coordination may jeopardize innovation and initiatives, even leading to forgo all opportunities in e-government applications. However, an effective coordination approach can generate efficiencies, reduce risk and facilitate a faster and broader rollout of e-government initiatives in public sector. In addition, the entire government structures can play an important role in steering e-government applications by providing a framework for collaboration across agencies and by keeping e-government activity aligned on broader public administration agendas.

Approach that can be adopted may include setting up committee of agency heads and chief information officers. Their roles may range from purely advisory and information sharing to policy development and implementation oversight of e-government applications in all public organizations across the country. Also, the involvement of non-government representatives from industries, academia and civil society organizations are crucial. It is obvious that engagement with private sector suppliers has been an integral feature of government use of ICT in public sector. Hence, private-public relationships can be broadened ranging from the acquisition of products and service such as computer mainframe, which governments themselves could not provide, to services such as the operation of computing facilities and direct provision to end users of government services.

Government’s partnership with private organizations in acquisition and application of ICT in public assets may involve arrangements whereby work, risk and rewards are shared. However, accountability, scrutiny and proper audit are requirements that need to be laid down on a sound foundation of such relationship. Retaining the public administration’s capacity to manage the relationship with the private partner is of crucial concern. Therefore, managerial awareness and commitment is essential to ensure that the required skills are developed and maintained in public sector.

Since the moral challenge facing e-government implementers in public sector is to respect the accepted privacy principles while allowing the benefits of e-government to flow to citizens. This balance is of a particular importance when considering service delivery involving data sharing among agencies and government institutional bodies that manage citizens’ data information. Government has a responsibility to provide leadership in developing a culture of privacy protection and security. This leadership role must be provided right from the initial development of application of ICT policies in public sector, as owner and operator of systems and networks, and as a user of such systems and networks themselves. As a user of information systems and networks, government shares a role and draw out the necessary lines of demarcation with business, other organizations and individuals for ensuring secure use of the systems.

The success of e-government application in public administrations is highly dependent on government’s role in ensuring a proper legal framework for the operation. The application and uptake of e-government services and processes will remain minimal without a legal equivalence between digital and paper processes. For example, the legal recognition of digital signatures is necessary if they
are to be used in e-government for the submission of electronic forms containing sensitive, personal and/or financial information. Additionally, complexity of regulations and requirements on agencies can be another barrier. Hence, privacy and security concerns need to be addressed through appropriate legislation and regulations before e-government initiatives can advance in Asia and any other developing part of the world. Hence, it would be a relevant value to regularly undertake a review of the overall regulations and requirements that govern e-government application in public sector particularly, those that govern ICT acquisitions and uses in various countries of the world. Identifying these areas would help reveal where redundant or overlapping regulations were existing. It believed that an agreed process and regular examination of legal procedures would provide an opportunity to get rid of requirements that have outlived their usefulness in ICT investments at large.

Today, governments continue to make considerable ICT investments and all these investments need to be well harmonized. Harmonization is a particular element in e-government application in public sector, as ineffectiveness of strategies may be in part due to failures to harmonize systems and standards. For example, investment of legacy systems can be inflexible and incompatible, which make it hard to deploy new applications that involve the need for data sharing or other interaction between disparate systems. In fact, the difficulty of integrating legacy systems with new initiatives can be a major barrier to the success of e-government application in public assets. Establishing common technical standards and infrastructure can pave way for greater efficiency within government agencies. In addition, shared infrastructure for authentication of key customer groups (citizens and non-citizens) can facilitate individual agency’s initiatives that would otherwise lead to a lack of a business function requirement.

It is of great importance to monitor and evaluate e-government application in public assets to understand demand, assess the benefits to users from time to time and evaluate the effectiveness of proposed approaches in meeting the objectives of e-government. In fact, evaluation is needed to argue the case for new e-projects and expenditure therein; to justify continuing with initiatives; to allocate additional ICT funds; to assess progress towards program goals and to understand the overall impact of e-government activities where they have been implemented. Therefore, in an era of increasingly tighten public spending; governments need to show concrete benefits of ICT investments in public assets in order to gain and maintain political support of the people whom the program is deemed for. It is quit understandable that monitoring and evaluation of e-government is generally difficult. However, given the frequent lack of clarity of objectives owing to the different and often competing views held by different stakeholders, overlapping initiatives and policies of continuous fine-tuning complicate the efforts of monitoring and/or evaluation. This, in part, may be due to the pervasive nature of ICTs, the integration of ICT goals with policy goals and the organizational changing roles that necessarily come with e-government initiatives. Hence, effective evaluation requires good metrics and devices. To overcome these problems, a successful e-government evaluation effort would need to address the following suggestions: (1) preparation of a framework for assessment prior to initiation of e-government must be ensured; (2) indicators are designed to reflect program e-government goals; (3) results need to be available to decision makers at the right time; (4) evaluation process should be unbiased and independent; (5) evaluation should be based on a mixture of qualitative and quantitative indicators; (6) direct and indirect costs-benefits must be taken into account; (7) and finally, e-government application should be repeatedly evaluated from time to time.

**Conclusion**
The paper has shown that e-government application in public sector provides a smooth interactive access of people to social services, which include among other things: employment assistance, tax and revenue services, corporate registration, licenses and permits renewals through a common entry point and shared portal services provide by government agencies. Therefore, it is an effective means of building the interface between government-to-government, government-to-business and government-to-citizens.
to-citizens. In addition, it helps generate efficiency, improve administrative reforms and improve services delivery of government agencies to people at large. So, by improving connectivity between government employees and departments, and with citizens and business, e-government application in public sector offers more convenient government services delivery system and greater public access to information at large. This ultimately creates a government that is more accountable to those who vote for its power.

Several factors are driving the application of e-government in various government entities in both developed and developing countries of the world. These include technology development, such as growing of computing power and telecommunications bandwidth; business investment in adoption of technology and competitive pressures of rival industries. However, e-government application in public administration is associated with many issues, especially privacy and security of people’s data information and many other related problems as highlighted in the paper. It is therefore argued that e-government application in public sector should be value-driven and not technology-driven. The benefits promised by e-government do not take place simply by digitizing services’ information and placing it online by government agencies. Instead, the challenge is to understand how the use of new ICT tools in public administration can leverage a transformation in the culture and structure of government institutional bodies or agencies in order to provide better services to the citizens. Finally, it is highly hoped that some of the suggestions raised in this paper would be adopted by governments and policy-makers to address various challenging issues that emerged in the course of adopting e-government to administer and coordinate the affairs of public sector for the benefits of the people in a country.

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[22] Malaysian Administrative Modernization and Management Planning Unit (MAMPU), Electronic government flagship application, CRFP No: MAMPU/EG/1/97, pp.6-7


Other useful Websites Sources


Key actors responsible for public sector modernisation at all levels of government (from co-ordinating units, sector ministries, and public agencies) will find the Recommendation relevant to establish more effective co-ordination mechanisms, stronger capacities and framework conditions to improve digital technologies’ effectiveness for delivering public value and strengthening citizen trust. The Recommendation is the first international legal instrument on digital government. HAVING REGARD to the Agenda on “Trust in Government: Evidence, Policies and Decision-making” welcomed by the 2013 Ministerial Council Meeting [C/MIN(2013)4/FINAL, Annex III] E-government (short for electronic government) is the use of technological communications devices, such as computers and the Internet, to provide public services to citizens and other persons in a country or region. E-government offers new opportunities for more direct and convenient citizen access to government, and for government provision of services directly to citizens. Public Sector E-Innovations: E-Government and Its Impact on Corruption. January 2013. SSRN Electronic Journal. Based on the analysis recommendations for overcoming international e-government. measurement constraints are put forward, as well as suggestions for future studies of the topic. JEL Classification: D73, H70, P17, O33, Z18. Keywords: Public sector, innovation, e-government, ICT, corruption. 1. Research Laboratory for Science and Technology Studies, National Research University. These innovative instruments appeared through regional development policy arrangements, which serve to prioritize public investment in regions through co-funding arrangements. 5. The implications for the public sector to help you make informed decisions about your strategic choices as we prepare to exit the EU. This could lead to acceleration of deficit/debt reduction plans. But policy makers also need to consider whether to re-create some or all of the EU Funds from which the UK currently receives payments. Regulation. Brexit will mean an end to EU regulation. But it could also mean that UK businesses have to adapt to a different set of UK regulations which could be just as costly. Public sector organisations will need to adapt as employers and in their role as policy makers to design new regulations taking account of any new freedoms. Sub-sectors. E-government and competitiveness: identifying the connection. Government as an actor of competitiveness. There is no clear and single definition of competitiveness in economics or in public policy literature. It is a somewhat vague concept, which comprises three different levels of understanding: the macro-economic or country level, the intermediate or industries level, and the micro-economic or enterprise level. 3. Greater use of ICT across all sectors helps firms to increase their overall efficiency, and thus raise multi-factor productivity across the economy. Greater use of ICT may also contribute to network effects, such as lower transaction costs and more rapid innovation, which will improve the overall efficiency of the economy, i.e. the nation’s MFP.