

ELECTRONIC TECHNOLOGY AND SERVICE DELIVERY IN THE SOUTH AFRICAN PUBLIC SERVICE¹

J.O. Kuye

G. Naidoo

School of Public Management and Administration

University of Pretoria

South Africa

ABSTRACT

Several academics and other concerned citizens have argued that in response to the complexity envisaged in the wide world of communication stretching across vast arenas, modern governments are compelled to utilize the abstract system of communication. Sometimes, governments have argued that this abstract imposition of communication is meant to stabilize the outcomes of complex inter-governmental synergies. Some have also argued that a single window system of communication can alleviate the complexities encountered in the delivery of vital goods and services in government settings. It is within this confine that this paper is forced to examine the concepts and ideas behind the institution of an e-Government strategy towards service delivery.

INTRODUCTION

An e-delivery strategy in Public Management is not only about the automation of the current way of doing business. It is about re-engineering the current way of doing business, by using collaborative transactions and processes required by the Government departments to function effectively and economically, thus improving the quality of life for citizens and promoting competition and innovation. To put it simply, e-Government is about empowering a country's citizens. The vision is ultimately about inclusion, that is, the ability of all people to take part in the economy. The Internet makes it possible for the government to streamline its interaction with business people, private citizens and government agencies, while at the same time, ensuring an improved public access to government information and services. It also provides for an improved quality

1. Paper presented at the International Institute for Administrative Sciences - MAS Regional International Conference, Yaounde, Cameroon

and-cost-effectiveness of government services through the utilization of effective information sharing mechanism and communication with its citizens. This mode of communication further allows the development and growth of an improved set of opportunities for participation in democratic institutions. By so doing, it cultivates an environment, which stimulates and promotes better relationships with the business community and private citizens.

At the heart of the e-delivery strategy is the recognition that e-Business or e-Government, is not about technology, it is about changing the way in which organizations operate. Business processes need to be changed and re-aligned to be able to take advantage of electronic technology. Furthermore, if customer satisfaction is not ensured, the systems will fall into disrepute. Thus, metrics must be clearly defined and continuous and accurate measurement implemented. The three critical metrics to measure the effectiveness of e-Government are application and service relevance; citizen and business satisfaction; and preservation of trust.

The business drivers of e-Government are somewhat different from the standard e-Business drivers and cognizance of this must be taken into consideration. There are a number of key business drivers, which are both internally and externally, focused in relation to the government departments, namely e-enabling citizens; information management; channel expansion; social inclusion; universal access; accessibility; and economic service delivery.

The key is to find technology platforms and applications that can drive the transition towards a new model for doing business in government. These must satisfy such basic requirements as the empowerment of citizens, ease of access to services, the enhancement of government image, the inclusion of citizens and leverage of emerging technologies. E-Government initiatives will help transform many industries, but organizations must understand the factors that will inhibit and those that will stimulate this change. Drawing from examples in South Africa, it might be worthwhile to examine a few case issues.

The South African scenario indicates that the small medium and micro enterprise (SMME) sector is vital to the economic success of the country. This is because the contribution of the SMMEs to stimulating economic growth and job creation is unparalleled in terms of speed-to-market, financial flow, informal channels, sources of innovation and country-wide reach. It is not enough to assume that the SMME entrepreneurs will take advantage of available technologies. There needs to be a clear definition of this environment in terms of e-Government initiatives, which require that the respective government departments are knowledgeable about e-Government, and that the required functionality is available with minimum requirements for financial or technological input from the SMMEs.

It is, therefore, important that suitable e-Government structures are in place to assist the SMME marketplace. Closely linked to e-Government, is the overall concept of e-

Governance, which deals with the transformation of the business of government and the transformation of governance itself. Many citizens in South Africa have become accustomed to going online, ordering exactly what they want and then receiving the item within a few days. They will inevitably expect the same kind of fulfillment from their government officials. It's not enough to simply put in new systems; the government has to find ways to respond to people timeously as well. As users begin to interact with the government online and experience the increased benefits, a greater degree of trust will be created. This is the arena in which it will ultimately be decided whether e-Government succeeds or fails.

Electronic technology can be used in all facets of the public service. It should be seen as the necessary infrastructure for government into the 21st century. The medium-term goal should be to implement an e-Government, which allows citizens instant access to information and services through an efficient process and which will fundamentally change the relationship between the government and the people in South Africa.

The information revolution is affecting how governments respond to the needs of their clients in the public sector. It has opened up new possibilities for the delivery of programmes and services in government departments. A defining characteristic of the South African public sector has been the existence of infrastructure to deliver programmes through a network of points of service to certain communities. The South African government is now experimenting with new organizational models such as, the electronic model, to deliver services to all communities namely, those that were denied basic services, as in the case of disadvantaged rural communities. The information revolution lessens the need for a large physical infrastructure to deliver programmes and services to the public. Efficiencies can be achieved through the sharing of data among departments, and the provision of a "single-window" of service delivery. With the use of networks and information sharing, organizational boundaries do not serve as impediments to service delivery, as is the case with traditional organizational models. New information technologies allow for integrated databases and common programme delivery. Clients will be able to face a "seamless" government in their daily interactions for programmes and services. Hence, the legitimacy and relevance of government can actually be enhanced by improved service delivery. New information technologies thus offer the possibility of close and ongoing interaction between government and citizens. More importantly, online information would result in the affirmation of previously disadvantaged groups. Online forms of governance are non-discriminatory, faceless and consistent. Furthermore, online forms of governance are replicable and empowering.

In the same vein, the counter argument could be re-postulated in the analysis put forward by Habermas and Giddens who examined the implications of three such systems which they call symbolic tokens, expert systems and generalized forms of communication that abstract systems of communication. (Habermas, 1987:394-5 and Giddens, 1990:1). James Slevin, (2000:14) in exploring some of the ideas put forward by Habermas and Giddens it is argued that "*symbolic tokens* are used in innumerable exchanges taking place all the time by individuals who neither meet nor talk...". On the other hand, *expert systems* "allow for more complex exchanges than symbolic tokens but, like them, work to relieve uncertainty and reduce the expenditure of communication" (Slevin, 2000:15).

To emphasize the implications of *generalized forms of communication*, Slevin (2000) further stressed that these types of communication "involve mediated communication produced for an indefinite, or at least a large range of potential recipients..." (p.15). All of these scenarios point to the different ways we can communicate in modern day settings.

IMPORTANCE OF RESEARCH FOR MANAGEMENT AND BUSINESS

It is increasingly clear that electronic technology will be a major force driving the South African public sector over the next few decades. Environmental pressures and business drivers necessitate transformation to the electronic model of service delivery. In this regard, the impact of the electronic model has confronted governments with an 'adapt or die' scenario. Electronic technology has created a new marketplace in which governments must operate. It has, therefore, become a major issue on policy agendas around the world and market-driven principles are now widely accepted in public sectors. For South Africa, to fall behind in technology and innovation would increase the gap between it and wealthier and more advanced economies. The world of electronic technology demands that the South African government rethink its role as catalysts for economic and social growth (Liebenberg, 2000:1). Nevertheless, the government recognises the importance of the Internet, for future social and economic success in South Africa as well as improving service delivery. To this end, various initiatives are being undertaken by government to promote the electronic model of service delivery in South Africa. However, the key concern is, does government have the capacity to co-ordinate and understand the various issues and initiatives, especially in the area of infrastructure which must underlie the electronic model development? (Green Paper on E-Commerce, 2000:67-73). It is evident that government is confronted with numerous challenges in this regard namely, negative socio-economic impacts, lack of finances, lack of infrastructure, and lack of strong leadership. It is, therefore, of crucial importance to examine these challenges and draw up policy initiatives to address these issues to allow for the successful entrance to the development of this model. According to Shilubane (2001:39) electronic technology "is the continuous optimization of government service delivery, constituency participation and governance by transforming internal and external relationships through technology, the Internet and new media".

This implies the transformation of how citizens, be they legal or natural persons, perceive and experience government. It is the investigation and formulation of new methods to enable the public to access Government services. It is evident that globalisation and

information technology is impacting on how South Africa (SA) conducts business and how government implements its day-to-day activities. Globalisation suggests that SA should be linked to the international community and to the degree to which companies can interact productively with the global community. Hence, the electronic model of service delivery will open up new opportunities for SA, for example, global markets and small business will be able to compete on an equal footing with big business. The electronic model is also an opportunity to promote economic growth through the creation of SMME's and the expansion of South African businesses into new markets. The electronic model will also level the playing field for small and large entities in SA, as these entities can extend into local and international markets and increase revenue potential. Hence, South African companies need to become globally profitable and to measure up to international benchmarks. The electronic model, thus, presents new opportunities to achieve a more level playing field *vis-à-vis* larger, more developed economies. The Internet can, thus, be a great force for economic development, the spread of democracy and for the promotion of communication and understanding. Furthermore, it diminishes existing advantages of cost, communication, and information and can create huge markets for indigenous products and services. The electronic model is, therefore, the indispensable prerequisite for sustainable economic development, for job creation, promoting social equality, improving service delivery and overcoming poverty in South Africa.

Another important feature of the electronic model is that it expands the size of any organizational entity from its immediate geographic area to a potentially worldwide area. This expansion into other markets and opportunities for existing and new businesses has created a potential for accelerating economic growth in SA, including relatively poor and rural areas. There will be a huge need for business development support programmes and for training in the electronic model applications such as the state-of-the-art web design, interactive media, different languages and other training. There is also a need for sharing of information and experience among web-based businesses, as market opportunities, strategic advantages, and unique approaches could be of value to all counterparts in South Africa (The Discussion Paper on Electronic Commerce Policy, 1999:30).

One of the most important benefits of the electronic model for South Africa is the opportunity to 'leapfrog' into the knowledge paradigm. In this respect, the electronic model will have an impact on all aspects of society not just the commercial or public sector. Nevertheless, progress with respect to the electronic model has been mainly evident in the private sector. The government can play an important role in examining the economic and social impact of the electronic model and promote an understanding of the model as well as create an enabling environment so that the model can succeed also in government (Liebenberg, 2000:1-2).

However, while many companies and communities in South Africa are beginning to take advantage of the potential of electronic technology, critical challenges remain to be overcome before its potential can be fully realised for the benefit of all South Africans.

The government, therefore, has an important role to play, in that it must establish policy for improving the quality of life of all citizens through equitable development, and, thereby set new precedents for the role of the electronic model in the country. It must, however, adhere closely to international principles, while nevertheless maintaining the broad focus on fostering widespread economic growth, opportunity, and global integration (Discussion Paper on Electronic Commerce Policy, 1999:32).

In this regard, the South African government is committed to promoting economic growth and development in the region, since SADC constitutes an important market for South African goods and services. The government, together with business, can therefore play a vital role in promoting the growth of the electronic model by instituting appropriate policies with respect to education, industry, technology, the economy, technical assistance and human resource development programmes, to enable the country to move from a traditional to an information society. Thus, government must become familiar with rules, frameworks, vague pointers, to assist in understanding and dealing with the electronic model (Liebenberg, 2000:1 -2). The government's influence must take on new dimensions.

The electronic model can also be an important strategy in building the country's comparative or competitive advantage. The electronic model presents unique opportunities for South Africa to greatly expand its markets, both internally and externally. Externally, the Internet and other technologies may allow for low-cost international trade, even for small local businesses. Internally, marginalised communities may gain affordable access to amongst other, government services and financial services, and may participate in all aspects of the economy. Companies and the public can conduct their business from any location. Hence, rural areas may become the focus for investment and market expansion and also for relocating corporate offices (Discussion paper on electronic commerce policy, 1999:33).

With respect to job opportunities, if the electronic model generates significant economic growth, this should lead to increased employment opportunities both in the private and public sector. However, initially workers could be displaced as a direct result of transformation as the skills and experience required for the electronic model could be significantly different from traditional employment skills.

There could be a short-term risk to workers whose current jobs and skills may become obsolete. The counterpoint to this argument is that there should be considerable long-term opportunities. Nevertheless, the Internet can provide direct employment opportunities in software, data processing and many other information-intensive jobs for those skilled in ICTs (The Discussion paper on electronic commerce policy, 1999:33).

However, an efficient and versatile infrastructure, finances and a skilled labour force are required for the electronic model of service delivery. Such an environment can facilitate electronic service delivery, domestic trade and also enable rapid growth in international

markets, which is an area of critical growth, since export markets will be the largest single source of gross domestic product expansion for South Africa.

AN ELECTRONIC MODEL FOR PUBLIC SECTOR DELIVERY IN SOUTH AFRICA

Governments globally are demonstrating the advantages of electronic government, namely, by conducting transactions electronically as well as electronic service delivery. Business imperatives entail improving customer service, focusing resources on core areas, and increasing competitiveness both nationally and internationally. By changing to the electronic model of service delivery, government will be, based on business-like practices and principles, cost savings and an enhanced environment (Green Paper on E-Commerce, 2000:103). The electronic model is vital for the South African public sector as it can open up new opportunities, namely a reduction in the number of paper transactions involved in government operations, public participation in decision making, government purchasing of goods and services, electronic payments and improvements in service delivery. In this regard, Keen & McDonald, (2000:42) argue that the electronic model of service delivery is an opportunity not to be missed. The electronic model is important as it can rapidly improve service delivery and productivity in South Africa. In order to obtain real benefits of the electronic model for better service delivery, better procurement, efficient working and better communication with citizens and businesses, the South African government is preparing a comprehensive system for implementation in its public sector.

The electronic model entails a shift to the customer, where citizens must be able to access more public services online at their convenience hence at 'anytime' and 'at any place'. Thus, services must be integrated and 'customer centric' in South Africa which must be aligned to the Batho-Pele service delivery framework of South African government. Hence, the electronic model presents both opportunities and challenges for the South African government. As a catalyst for economic growth, the South African government simultaneously faces demands to make services more accessible, responsive and affordable to the public. The South African government sees the value of the electronic model as efficient means to deliver public services, such as education and health care, to the broader South African population. In this regard, the fact that many services can now be delivered electronically has implications for the South African government's service commitments, since many of these commitments were made without considering electronic service delivery (Green Paper on E-Commerce, 2000:100).

The advances in technology hold great potential for helping the South African government respond to its challenges namely, better service delivery, better procurement, efficient working and better communication with citizens and businesses. The public sector

markets, which is an area of critical growth, since export markets will be the largest single source of gross domestic product expansion for South Africa.

AN ELECTRONIC MODEL FOR PUBLIC SECTOR DELIVERY IN SOUTH AFRICA

Governments globally are demonstrating the advantages of electronic government, namely, by conducting transactions electronically as well as electronic service delivery. Business imperatives entail improving customer service, focusing resources on core areas, and increasing competitiveness both nationally and internationally. By changing to the electronic model of service delivery, government will be based on business-like practices and principles, cost savings and an enhanced environment (Green Paper on E-Commerce, 2000:103). The electronic model is vital for the South African public sector as it can open up new opportunities, namely a reduction in the number of paper transactions involved in government operations, public participation in decision making, government purchasing of goods and services, electronic payments and improvements in service delivery. In this regard, Keen & McDonald, (2000:42) argue that the electronic model of service delivery is an opportunity not to be missed. The electronic model is important as it can rapidly improve service delivery and productivity in South Africa. In order to obtain real benefits of the electronic model for better service delivery, better procurement, efficient working and better communication with citizens and businesses, the South African government is preparing a comprehensive system for implementation in its public sector.

The electronic model entails a shift to the customer, where citizens must be able to access more public services online at their convenience hence at 'anytime' and 'at any place'. Thus, services must be integrated and 'customer centric' in South Africa which must be aligned to the Batho-Pele service delivery framework of South African government. Hence, the electronic model presents both opportunities and challenges for the South African government. As a catalyst for economic growth, the South African government simultaneously faces demands to make services more accessible, responsive and affordable to the public. The South African government sees the value of the electronic model as efficient means to deliver public services, such as education and health care, to the broader South African population. In this regard, the fact that many services can now be delivered electronically has implications for the South African government's service commitments, since many of these commitments were made without considering electronic service delivery (Green Paper on E-Commerce, 2000:100).

The advances in technology hold great potential for helping the South African government respond to its challenges namely, better service delivery, better procurement, efficient working and better communication with citizens and businesses. The public sector

should be responsive to the needs of citizens and service delivery should be of high quality. By linking the South African government in all spheres within and across department lines, and by improving citizen access, convenient and efficient methods of conducting government business are enabled. Hence, the organizational and operational changes will take place on many fronts and in many ways. However, at their core, all are driven by an architecture and an infrastructure that allow for information to be seamlessly moved across government, between its various programmes and ultimately, to citizens and businesses. By providing online access to information and services through phones, faxes, self-service kiosks and world-wide-web home pages, government can provide higher quality, faster service to the public. Such initiatives hold great benefits, but the lack of strategy and synergy among various ministries may continue to be a significant barrier (Green Paper on E-Commerce, 2000:100-105).

Through the application of advanced network technology and the deployment of multiple service delivery points, the South African government can overcome barriers of time and distance and become better positioned (Liebenberg, 2000:1-2). Continued progress in areas such as competitiveness, quality and effectiveness of traditional government services will enable government to address a number of criticisms, namely, that government is not customer-focused, it is not delivering; and it fails to stimulate economic growth. As a result, the South African government is striving not only to improve the efficiency and quality of services, but also to ensure that services are delivered at the most convenient times and locations via electronic media. The adoption of the electronic model will, however, involve a fundamental shift in the South African government because the changes implied by the electronic model will affect the core operational and managerial aspects of government. The scope of the electronic model in government will extend to what it can do, to a network of stakeholders (such as the public/customer, a network of suppliers, intermediaries and others). However, the South African government must integrate vertical operations with virtual integration (Liebenberg, 2000:1-2).

The benefits of e-Government must be tangible. The benefits of e-Government should make it easier for businesses and individuals to deal with government. It should enable Government to offer services and information through new media such as the Internet or Interactive TV. E-Government should improve government efficiency and effectiveness through automating processes and streamlining processes.

The communication between different government departments and functions should be improved so that people do not have to be asked repeatedly for the same information by different service providers. E-Government should improve access to information - either via Call Centres or the Internet - so that government departments can deal with members of the public more efficiently and more helpfully. The different parts of government should be more easily able to work in partnership: central government with local authorities or the voluntary sector, or government with third party delivery channels such as SAPO or the private sector. E-Government will provide government systems to become

a learning entity by improving access to, and organization of, information (Czernaiwska & Potter, 1998:10-15); (Africa's Internet Newspaper, 2000:2-5).

Some of the ultimate benefits of the electronic model are better-informed citizens, increased productivity, improvement in service delivery and more efficient government! By using the model applications, for example, in procurement, the impact on operation and service delivery will be tremendous. In this regard, the government is the largest purchaser of products and services amounting to approximately R65 billion a year. Internet based e-procurement will therefore, present tremendous opportunities for the government namely, (Green Paper on E-Commerce, 2001:103) 'reduced prices of materials, shortened acquisition and fulfillment cycles, decreased administration burdens and cost and improved inventory practices; and increased control over purchases.'

CHALLENGES FACING THE SOUTH AFRICAN GOVERNMENT

The challenges facing the South African government in transforming conventional government into electronic government are tremendous. In the USA, the huge Internet user base is 100 million, which has given, rise to a thriving Business to Consumer (B2C) marketplace. It is different in SA, where the Internet users number only two million. Although it is agreed that the Internet is a great way to do research and establish customer contact, government departments as well as businesses are generally afraid of the technology. Moreover, many organizations are not willing to spend a lot of money on the Internet approach. They are also reluctant as the human element is lacking with this approach. Many government departments, businesses and consumers are still wary of conducting extensive business over the Internet because of the lack of a predictable legal environment governing transactions. Furthermore, most sites on the South African government are no more than electronic brochures. There is a dire lack of understanding of the powerful role the web can fulfill. For example, South African government sites on the web appear to be electronically enabled but generally are not. Hence, from an online strategy point of view, there is no consideration of the customer. Furthermore, there is no effort to market these sites online. Thus, very few South African government departments are employing the electronic model, despite claims that it's the online element of the web that is the key to entrepreneurial government based on business like principles, and cost savings.

Other challenges faced by the South African government with respect to the electronic model are, (Liebenberg, 2000:1 -2): ensuring effective methods of protecting privacy over the Internet; identifying possible legal barriers to the development of the electronic model; providing education and training on the usage of the electronic model; addressing the lack of preparedness by government institutions, consumers, companies and SMMEs; and managing the negative socio-economic impacts, for example, job losses and other associated risks.

There are concerns centering on issues such as enforcement of contracts, liability, intellectual property protection, privacy, security and other matters, that have caused government departments, businesses and consumers to be cautious. These are major drawbacks that the South African government must address (Johnson, 2000:13). The South African government will need to consider the development of a national policy to support and expand the electronic model in South Africa both in government and industry. This should also serve as the underlying philosophy for the establishment of the electronic model for SA. Another area on which the electronic model will have an impact is the area of international and national global trading legislation, which will have to be aligned in the context of global trading on the Internet.

Consequently, initiatives over a horizon of ten years in South Africa will have to contend with the ensuing issues, which Shilubane (2001:42) categorizes as an ICT infrastructure which is weak in geographical areas in which the majority of citizens live. He suggests that this is due to the fact that because of the apartheid legacy, separate developments occurred. He further argued that in ICT related goods and services, procurement of services are made available on suppliers' terms, most of which are foreign companies, and the low per capita purchasing power does not allow markets to mature. It was further noted that the general education level is lower and ICT degrees are difficult to obtain, hence there is an over-dependence on imported ICT goods and services, rather than the development of local solutions. Quite interestingly, Shilubane observe that organizations have less and shorter experience in using ICT, consequently resulting in time consumption in the offering of a more comprehensive range of services leveraging ICT capabilities. He further suggests that information sharing is not common among organizations, and sometimes, even within an organization itself, and given the old silo/command structures, the provision of seamless services is usually hampered by fragmented information systems. All of these fragmented systems will take a while to inter-operate. The e-Government readiness strategy varies significantly between government departments, provinces and local authorities even with a pressing demand for such a strategy in the public service in times of budgetary constraints. The gap between the ICT development scenario and the reality is big, and needs financial priority; governments the world over find it difficult to recruit and retain competent ICT professionals. E-Government endeavours, require some in-house champions to undertake planning and oversee an integrated development process. As the South African government is confronted with innumerable challenges that need to be addressed, the quest for a viable solution is imperative.

E-GOVERNMENT AND SERVICE DELIVERY

The information society will undoubtedly have an impact on ways of communicating, receiving and sending information and new ways of working in South Africa. It offers South Africa an opportunity for development and progress, and also presents new and demanding challenges. Electronic technology has created a new market-

place in which government is required to operate. Hence, we have an arena without conventional rules, which challenges existing practices and notions. This new phenomenon may also defy regulation. This requires careful consideration by the South African government in term of its implications for the public sector, society and business. Those that are affected by the electronic model will have to play a vital role to help government to move ahead on some of the crucial issues that the model presents (Discussion Paper on Electronic Commerce Policy, 1999:1).

In government use, e-business is about Internet applications that enable the public to access information and interact with government departments on the web. It is not about reinventing the organization. It's about providing citizens with better information and new knowledge to make faster, more informed decisions possible. As with any other successful projects, it is necessary to formalize the processes in order to realise the benefits. The processes may then be driven by means of standard project management methodologies and, typically, using a programme office scenario (Africa's Internet Newspaper 2000:1-7).

Successful e-Governments take a strategic approach, leveraging their knowledge and information over time. They capitalize on the information. Government departments need to re-design themselves and the way they provide services to take advantage of the technologies enabling the new digital economy. This means that there must be a definite focus on the way a department connects to its external environment. However, being effective in the external environment requires introspection. Issues that should be considered should include (Government News, 2001:1-5) & (Have you Heard, 2001:1): how a government department wants to be relevant in the new economy; and how the government organizes itself internally and how it allies itself to partners to achieve this.

For e-Government to provide benefits and value to government and citizens, it will be essential for the functional steps to be followed and implemented. The success of e-Government depends on insight, planning and total commitment. Nevertheless, the main point of contention for government is on how to formulate a coherent policy strategy on the electronic model. The main concerns for the South African government on the electronic model in South Africa are (Discussion Paper on electronic commerce policy, 1999:5): "(i) Deciding on the governing philosophy that guides nation-wide decisions on priorities and options concerning the electronic model of service delivery; (ii) How and under what organizational structure will the electronic model be co-ordinated; (iii) Formulation of policies to overcome real and perceived risks to businesses and consumers that can arise in electronic transactions; (iv) Formulating policies that establish the ground rules applicable to electronically based businesses, on a national and international level; (v) Formulating policies for enhancing the information, telecommunication and financial services technologies and facilities that are essential for participation in global E-Commerce; and (vii) Formulation of policies that focus on promoting new business opportunities and on easing the transformation of the economy."

The effective development of the electronic model will require a well co-ordinated and participatory process that involves a wide range of stakeholders in both the public and private sectors. The adoption of the electronic model will involve the integration of many elements of technology, infrastructure, business operation and public policy. The technologies must be fully operational, to the operational needs, to implement innovative approaches that will promote market development. These requirements will be applicable to all sectors of society, including the public and private sectors. 'An effective national policy on the electronic model can be established only if disparate operational, legal, regulatory, and enforcement actions within the government, along with technical, marketing, financial, and management strategies in the business sector, are closely aligned. The key concern is, does government have the capacity to co-ordinate and understand the various issues and initiatives, especially in the area of infrastructure, which must underlie all electronic service delivery. The other areas of concern are briefly outlined below (Green Paper on E-Commerce, 2000:67-73):

Consumer Protection, Privacy and Security

The South African government will need to secure networks, access points and business-critical applications against theft, fraud, electronic abuse and misuse. Therefore, a number of countermeasures are to be undertaken to ensure that the electronic model is as secure as traditional forms of transaction (Green Paper on E-Commerce, 2000:41-47). Government must develop policies that build trust in electronic transactions, as there has been an increase in fraud and abuse with transactions online. There must be confidence that electronically based purchases, fund transfers and business deals are valid as traditional practices. Hence, personal information and finances must be secure so that consumers can be well protected against fraud and mistreatment. There must be accountability for the quality, reliability and legality of products and services. This also raises issues, mainly for government, such as national security and facilitating law enforcement, protection of citizens' privacy, encouraging economic well being, and maintaining public safety. Furthermore, as the use of encryption spreads, the result can be access to cryptographic codes or decryption keys by government agencies such as law enforcement and national security (Discussion Paper on Electronic Commerce Policy, 1999:11). The use of the Internet has also raised new issues concerning confidentiality of records in terms of access to personal details, jurisdiction over storage and use of data, and protection of financial information disclosed in electronic transactions. With respect to enhancing users' sense of privacy protection in the on-line environment, government regulation could play an important role through specific legislation, to require website operators and database owners to conform to certain standards regarding the use of data (Green Paper on E-Commerce, 2000:41-47).

Taxation

One of the major difficulties that the South African government must face as the electronic model grows, is the question of taxation with respect to electronic transactions, and of import duties, when they cross international boundaries. Specific new taxes called 'bit taxes' may have to be applied to digital transmissions, separate from ordinary taxes, for products and services purchased electronically. With respect to tax collection under the electronic model, there are complications around issues of jurisdiction and institutional roles. Operating on the Internet implies that the physical location of a business is almost irrelevant, and possibly undetectable, as data files and related hardware can be easily moved from one location to another. Hence, tax laws based upon the seller's place of business can become increasingly difficult to enforce (The Discussion Paper on Electronic Commerce Policy, 1999:20-25). In South Africa, there are no specific provisions that cover electronically transmitted 'goods' and 'services'. The tax and tariff policies in South Africa have not yet been updated to encompass the realities of electronic technology.

Intellectual Property Rights and Domain Names

Other issues of concern are intellectual property rights and domain names. The future development of the electronic model is dependent on the protection of copyrights and related rights and the protection and equitable allocation of trademarks and domain names. South African laws must conform to treaties with respect to intellectual property rights, including software, recordings and technical designs against illegal pirating and from unfair use of South Africa trademarks. Furthermore, there is no other established legal precedent to ensure protection of companies' trademarks in the 'virtual' environment in South Africa (Green Paper on E-Commerce, 2000:41-47).

Enhancing Infrastructure

The lack of infrastructure in South Africa has impeded the progress of the electronic model both in the public and private sectors. For the vast section of the population, infrastructure is often limited or non-existent, and is unaffordable. Hence, one of the major concerns for government is the need to enhance the national infrastructure to support the electronic model. However, the possibility of participating in the global electronic marketplace/ and or electronic model of service delivery is remote for the majority of the population, as there is a low level of basic telephone services in rural areas, and access to computers and data services are even lower (Liebenberg, 2000:1-2). Furthermore, the Internet is restricted to particular geographic locations and segments of the population, due to historical inequities in society, and the lack of access to basic telephone service and computers particularly to rural areas (Green Paper on E-Commerce, 2000:52-63) & (Discussion paper on electronic commerce, 1999: 21-27).

Telecommunications market and pricing policy

Regulation of the telecommunication industry is an important public responsibility, to support fair competition and to oversee appropriate pricing and service responsibilities. The prices charged by telecommunication operators in South Africa for access to crucial services can be an important factor in determining the effectiveness and affordability of the electronic model opportunities on the whole. It is extremely difficult for smaller entrepreneurs, ISPs, and public operators such as tele-centres to afford to connect themselves. This will inevitably form a barrier to the electronic model of development. This could create economic barriers, especially for the most disadvantaged users.

Although 2,8 million telephone lines will be made available in the next five years throughout South Africa, it is not sufficient; to achieve the entire infrastructure needs of the electronic model (Discussion paper on electronic commerce policy, 1999:24). Many questions will need to be addressed in the context of the market opening policy. These will, amongst others, include the interconnection regulation, treatment of Universal Service Fund contributions, tariff regulation, cross ownership with other industries and the role of ICT in government (Discussion paper on electronic commerce policy, 1999:25) & (www.iweek.co.za, 2000:7).

The South African government must deal with these critical challenges to ensure the successful entrance of the electronic model of governance. In line with its Constitutional mandate, the Department of Public Service and Administration (DPSA) is developing an e-Government strategy as part of its overall service delivery improvement programme in South Africa. In preparation for a more convenient, efficient, effective and integrated government service delivery system, the DPSA has commissioned a scooping study. The objective of the scooping is to describe the optimal process by which government can deliver services to citizens, according to critical life cycle events, rather than as defined by government structures and systems. The study will capture the entire interface that takes place in the Government-to-Citizen (G2C) and Government-to-Business (G2B) relationship, from the point of view of providing a single gateway through which citizens can interact with government. The study will focus on mapping both technology enabled information flows, as well as the institutional mechanisms through which they are delivered. The desired outcome of the study is to develop a vision of optimal service delivery, which will reflect those government departments which are better positioned to collect, process, store and disseminate various types of information, as well as suggest the most appropriate mechanisms through which services should be made available to the public (Shilubane, 2001:44).

CONCLUSIONS AND RECOMMENDATIONS

The electronic model will have far reaching implications and impact on South Africa. The success of the electronic model initiatives requires strong and high-ranking political and bureaucratic leadership. In addition, the implementation of the South African government's online strategy will require a sustained government wide effort in collaboration with all levels of government namely, provincial, municipal and third parties as well as collaboration with the business sector. In addition, the success of the electronic model in South Africa will require an effective partnership between the private and public sectors. Nevertheless, there is a need to develop solutions and policies in collaboration among the South African government, the public and industry. Departments in the South African public sector must therefore re-engineer their processes, policies and programmes to align themselves with the electronic service delivery model. The success of the electronic model will also depend on vast amounts of time as well as capital. Government and business must debate and address issues and initiatives required to create an enabling framework for the electronic model both in the private and public sectors in South Africa. Efforts must be speedily made to include a host of stakeholders, to ensure that policies and processes are put in place that addresses the needs. The government sees its role as an enabler, facilitator, educator and law enforcer to prevent cyber crimes, as well as a model user of the electronic model of service delivery. The South African government's participation must be coherent and cautious, avoiding the contradictions and confusion that can sometimes arise when different government departments assert their authority too vigorously and operate without co-ordination. Other important issues include the fact that sufficient resources must be made available to ensure successful policy implementation. Accordingly, the South African government must encourage and promote the electronic model by creating the necessary conditions in this regard namely, consumer protection and privacy and establishing and enhancing the necessary infrastructure. There is undoubtedly a great opportunity for commercial and government activity on the Internet. If private sector and government act appropriately, this opportunity can be realised for the benefit of all South Africans.

Partnerships between the South African government and industry will be required, not only to develop the actual strategies, but also to become involved in the integration of the existing, future and newly created digital world entities. Without a cohesive outlook and attitude to such a challenge, the anticipated benefits may not accrue. The critical challenge for government will center on how it sources its capabilities, how to ensure implementation of rules, and how to manage its network, both within and outside the public sector. Government must be willing to challenge its existing model, its scope of control and how technology will be applied. It must recognise the importance of an Internet-based strategy in service delivery and building relationships with key stakeholders outside the public service. It should recognise the changing nature of government and how it can use the electronic model to promote its vision of excellence and customer value.

Government can thus refocus its attention to customers and value network relationships. The government must also take the necessary steps to ensure that public managers understand the electronic model for ensuring its effective implementation, Hence, managers must understand approaches for implementing the electronic model that will span multiple network players and channels. The implications of integrating technology into public sector departments will be far reaching. The new fit will entail understanding the fit between government rules, capabilities and technology. The South African government should look at what it means to establish the electronic model that involves embedded rules and regulations, application programme interfaces and the accelerating move to component-based technologies and approaches. The electronic model will center on relationships involving various stakeholders. It means designing and operating the business from the public perspective (the customer) and recognising that all aspects of governmental operation will affect the public. The model will rest on building relationships with the public and ensuring speedy service delivery through the building of networks within and outside the public sector.

Broadly speaking, a suitable four-step programme for e-Government should entail Transformation of the core business processes, the introduction of South African Government departments to become receptive to changing their work processes and have a vision of how such a transformation will improve their operations, and the building of a new generation of c-business applications which will allow the South African Government to build the required functionality without reinventing the wheel. Such an approach will allow the systems and applications that they already have in place to become more functional with the appropriate emphasis on application integration. The adoption of such an 'electronic architecture' that is scalable, open and secure is essential, and finally, it is also suggested that the South African Government should establish a hardware infrastructure that can grow easily, as requirements and demand increases. Hardware and software alternatives should also be made available in such a manner that they can provide for high levels of security. Such a mammoth task requires a well-strategised, thoroughly planned and carefully coordinated approach to ICT and electronic government.

CONCLUSION

In an era where the communication of information has become so vital for generation of knowledge, it is most apparent that nation states utilize the expediency of faster and reliable means of the transportation of these data bases. Never has there been so much information available to the human as there is today. The search for excellence continues and the acquisition and consolidation of different learning portals increases. In South Africa, there are a number of areas for further study that need to be explored and which are considered vital to the success of the electronic model for governance. Some of the critical areas include the digital medium for export and trade, the rationale for govern-

ment departments to provide training and education initiatives and adequate funding mechanisms need to be explored, the impact of the electronic model on the workforce in terms of both job losses and job creation are crucial and the ultimate determination of what resources should be devoted to retraining and compensation for workers who may be at risk due to the introduction of an electronic model, through issues of automation, shifting of jobs offshore, or the elimination of the need for certain intermediary activities must be investigated.

It is therefore apparent that a study on the need for the South African Government and the private sector's share of responsibility and cost for easing the transformation of the workforce through these changes should be conducted. This is a major quest in South Africa's attempt to address the electronic divide in the information age.

E-Government is about competing in an electronically enabled world, which creates fundamental shifts in existing markets and creates new industry opportunities. The maxim of having to be 'worldly-wise' in a global village has now become a reality. South African government departments thus need to have this global-village wisdom. As the South African government progresses on its journey towards e-Government, it must select specific applications, promote them to the citizens and define auditable security and privacy policies. In this way, the Information Communication Technology (ICT) return on investment will be more rapid for government while the value creation for citizens will be maximized and visible. In the digital world, value creation will no longer be cordoned off within the boundaries of a single corporation. The extended enterprise will become the essential element and way of transacting business. It is necessary to take cognizance of this fact when designing the elements of e-Government. The electronic model is thus a key element in helping the South African government to provide better services to the citizens. Many governments abroad have already adopted electronic delivery strategies. However, it is not enough for governments to simply automate their current ways of doing business.

Finally, with the new tools of a networked society, government must completely rethink and re-engineer itself as new and innovative issues of Government, become central players in the new economy. They set the climate for wealth creation. They can act as a deadening hand on change or be a catalyst for creativity. They can cause economic stagnation through runaway deficits, or they can set a climate for growth. The ultimate goal for innovation is not fear but the ability to reform and transform in the electronic era.

BIBLIOGRAPHY

Books

Blundell, B. and Murdock, A. 1997. *Managing in the Public Sector*, Oxford: Butterworth-Heinemann.

- Heeks, R. 2001. *Reinventing Government in the Information Age: International Practice in IT-enabled Public Sector Reform*. Routledge: London.
- Igbaria, M. and Siegel, S.R. 1992. The reasons for turnover of information systems personnel, *Information and Management* 23, 3.
- Keen, P. & McDonald, M. 2000. *The e-Process Edge*. USA. McGraw-Hill
- Czerniawska, F. & Potter, G. 1998. *Business in a Virtual World*. Great Britain. Macmillan Press Ltd.
- Slevin, j. 2000. *The Internet and Society*. Blackwell Publishers, MA, USA.

Newspapers

- Africa's Internet Newspaper - Interactive week 2 October 2000. Vol.1 No.13.
- Africa's Internet Newspaper - Interactive week 18 September 2000. Vol.1 No.12.

Journals

- Business 2.0 An Intelligence - MB Worksoft. May 2000.
- Business 2.0. 10 Driving Principles of the New Economy. MB Worksoft. October 2000.
- The Definitive Business Ecosystem. Computing SA. 2000.

Reports

- U.S. Government Working Group on Electronic Commerce. First Annual Report. November. 1998.
- Toward Digital e-Quality. The U.S. Government group on electronic commerce. 2nd Annual Report, 1999.

Papers

- Discussion Paper on Electronic Commerce-Department of Communications Policy, July 1999.
- Green Paper on E-Commerce 'Making it your business' November 2000. A Framework for Global Electronic Commerce. July 1,1997.

Other

- Electronic model of service delivery:** *Industry pioneers join forces to present Bill Tracker.*
- Have you Heard No.031.** *ITWeb Sabinet Online* (Pty) Ltd. 2001.
- Have You Heard No.134.** *International: A tall order for FirstGov.*
- Federal Computer Week. Sprehe, J.T. 2000
- Electronic model of service delivery.* Experts: E-gov examples shine abroad. 2000.

Federal Computer Week. *Matthews W.* No. 225:2000.

International: Lee *defends paperless contracting.* Federal Computer Week. Murray B. No 0406.

Government News: *SARS to go E-Commerce.* IT Web Roodt J. No. 020. 2001.

Electronic model of service delivery: New IEC Internet facilities. GovWeb. No. 170. 2000.

Electronic model of service delivery: Dawn of the estate. Business Day. No. 137. 2000.

Have you Heard. *Federal Computer Week.* No.208. 2000.

Have you Heard. *Realizing electronic model of service delivery.* No. 021. 2001.

Have you Heard. *Computer Week. Electronic model of service delivery. The seven habits of highly effective electronic model of service delivery.* No. 061. 2001.

Have you Heard. *ITWeb. Giba forum renews regulation debate.* No.174. 2000.

Have you Heard. *Electronic model of service delivery.* No. 214. 2000.