Electronic government: A case for Papua New Guinea

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Abstract

The rapid expansion of information and communication technology (ICT) and the various internet technologies are changing the way citizens, businesses, institutions and governments are conducting their daily activities. Examples are selling, buying and marketing by businesses, offering courses by educational providers and delivering public information and services through the internet by governments for citizens, businesses and other agencies. Developing countries like Papua New Guinea (PNG) face many challenges for the adoption of e-government and issues related to public service delivery. PNG government needs to address these challenges in order to successfully implement e-government initiatives. E-government can assist PNG to deliver services efficiently and make important information accessible to the public electronically.

Key words: clients, electronic government (e-government), information and communication technology (ICT), service delivery, government-to-citizens (G2C), government-to-businesses (G2B), government-to-government (G2G), government-to-employees (G2E), stages of e-government, types of e-government.

Introduction

Lack of effective government and administration in developing countries like PNG is a reality in our society today (Nelson, 2003). There are many allegations of corrupt practices and inefficiency in government departments, resulting in poor public service delivery. Resources are misused though violation of regulations, unethical practices, disregard for intended administrative procedures, rules and standards, acceptance of bribes and inappropriate conduct for personal gain.

This paper will seek to demonstrate that one way to achieve efficiency and effectiveness in the delivery of public information and services is through the implementation and adoption of e-government in PNG. It will also seek to examine the case for e-government in improving public service delivery in PNG. It will argue that e-government has the potential to streamline and improve government operations and processes, maximize effective and efficient delivery of public information, services and transactions in one way or the other between its citizens, businesses and other government-related entities (Alshihi, 2006; Alsowayegh, 2012).

Definition of e-government

E-government (electronic government) has been variously defined as 'a structure that enables the government to deliver its services online, making them easily available to citizens and businesses' (Alsowayegh, 2012:51). It has also been defined as 'the use of information and communication technologies, and particularly the internet, as a tool to achieve better government' (OECD, 2003:63). Again, it is described as 'providing public access via the internet to information about all the services offered by central government departments and their agencies; and enabling the public to conduct and conclude transactions for all those services for example paying tax, claiming and receiving benefits, getting a passport. It is also about departments harnessing new technology to transform the internal efficiency of government departments' (Bourn, 2002:1).

The above definitions can be used to derive a working definition for this paper, which is 'the use of ICT to integrate and streamline government systems and processes to improve access to and delivery of public information and service delivery of higher quality'. The use of this definition means that governments can use ICT transform the way they operate so that information and services of higher quality are delivered to citizens, business partners and other public agencies.

Citizens, businesses, government employees and other government offices and agencies that a government may interact with through e-government systems to provide services will be referred to as clients. These services delivered using e-government refer to those which can be provided electronically in an efficient and effective manner using such systems. For example, the government can provide a service that can allow citizens to apply for new driver licenses or renew their current ones online, reducing time, cost and effort involved processing and obtaining the license.

Types of e-government

E-government can be categorised into four major groups or types, which have different degrees of applications: government-to-citizens (G2C), government-to-businesses (G2B), government-to-government (G2G) and government-to-employees (G2E) (Alshihi, 2006; Homoud, 2009; Alsowayegh, 2012).

Government-to-Citizens (G2C)

G2C (Figure 1) allows government departments and organisations to provide information and deliver services to its citizens such as when governments publish public information on their Web sites for their citizens to easily access and be well informed (Alshihi, 2006; Homoud, 2009; Alsowayegh, 2012). G2C also enables governments to communicate and interact with their citizens, allowing citizens to perform various transactions with their governments such as applying for a new passport online or renewing an existing one rather having to wait for months to process a passport using traditional methods of using paper forms.
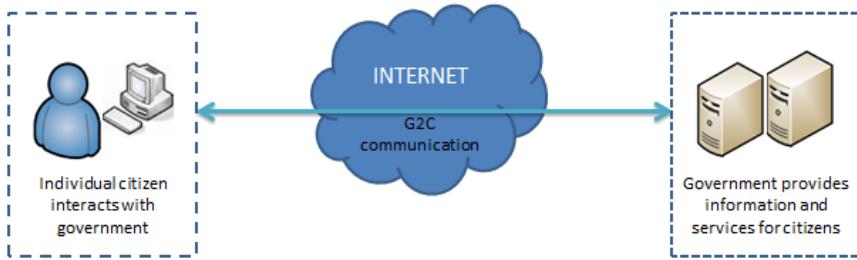
Figure 1: G2C enables communications between government and citizens

Government-to-Businesses (G2B)

With G2B (Figure 2) businesses can access business-related information and services from their governments such as downloading tenderer's information when bidding for government projects from government Web sites. G2B also enables businesses to communicate, interact and transact with their governments such as renewing their business registrations or lodging their taxes more conveniently through G2B systems (Alshihi, 2006; Homoud, 2009; Alsowayegh, 2012).
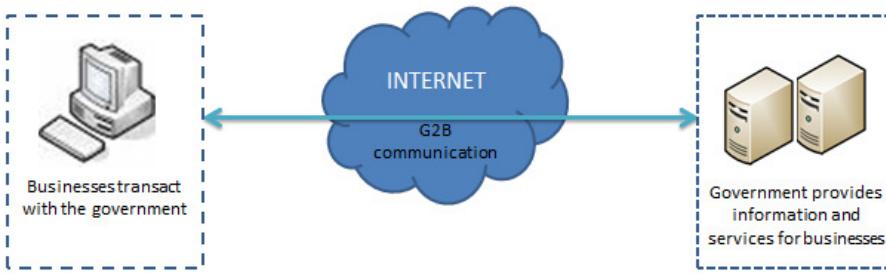
Figure 2: G2B enables communications between government and businesses

Government-to-Government (G2G)

G2G(Figure 3) enables effective intra-government collaboration and cooperation to take place, improving certain processes that span multiple departments. Processing certain documents such as business registration forms requiring inputs from several government departments can be enhanced through G2G systems. G2G also allow governments to interact and transact with other governments, enabling effective inter-government partnerships such as when a government department may need to collaborate with an overseas government department to work on a particular project that will affect both governments (Alshihi, 2006; Homoud, 2009; Alsowayegh, 2012). G2G sets a foundation for e-government. Governments should first use G2G to integrate, streamline and improve their internal systems, processes and communications so that they are able to use G2B and G2C systems to interact with their clients (Atkinson & Ulevich, 2000).
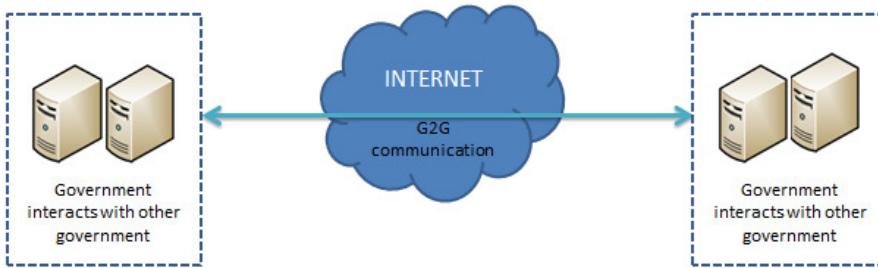
Figure 3: G2G enables intra- and inter-government communications

Government-to-Employees (G2E)

G2E is similar to G2C and allows efficient interaction and communication between government and its employees. An intranet site is an example which a government department can use to communicate internal information with its employees. The government can also use e-learning sites to provide training and development services (Alshihi, 2006; Homoud, 2009; Alsowayegh, 2012).

These e-government types seek to meet different groups of clients affected by their government. A model can be used to properly plan these e-government types so that they are implemented successfully in phases or stages.

Stages of e-government

A number of different models for the implementation of e-government have been discussed, each with varying numbers of stages (Seifert, 2003; Cordella, 2007; Irani, Alsebie, &Elliman, 2006; Bwalya, 2011).Some models have stages with similar elements and while others differ in regard to different perspectives including technological and organisational. Baumand Di Maio (as cited in Bwalya, 2011) and Chandler and Emmanuels (as cited in Irani, Alsebie & Elliman, 2006) proposed different four-stage models (Table 1) with similar perceived level of information and services.

Table 1: Four stage e-government models to guide planning and implementation

Stage	Chandler & Emmanuels Model	Baum & Di Maio , Gartner Model	Perceived Level of Service
First	Information	Presence	One-way communication from the government to its client, providing basic information.
Second	Interaction	Interaction	Basic two-way interaction but it still revolving around exchange of information.
Third	Transaction	Transaction	Capabilities for transactions to occur, adding value to clients.
Fourth	Integration	Transformation	Integration of its systems and services at different levels of government vertically and across departments horizontally.

The information/presence stage provides a one-way communication from the government to its clients providing static information. With this stage, for example, the government provides information about the services it provides, its vision, policies and contact details through its Web site to the public (Seifert, 2003; Cordella, 2007;Irani, Alsebie, & Elliman, 2006; Bwalya, 2011).

The second stage builds upon the first providing a basic two-way interaction but it still involves exchange of information. This includes citizens emailing public offices enquiring for more information about certain services provided, downloading forms from the government Web site to be completed and either emailed or mailed back to the public office for processing (Seifert, 2003; Cordella, 2007; Irani, Alsebie, & Elliman, 2006).

The third stage is more complex than the interaction stage and provides capabilities for transactions to occur between governments and their clients resulting in adding more value for clients. For example, both citizens and businesses can renew their driving licenses and registrations, respectively, online (Seifert, 2003; Cordella, 2007; Irani, Alsebie, & Elliman, T, 2006).

The integration/transformation stage extends the transaction stage and integrates its systems and services at different levels of government vertically and across departments horizontally. This results in transforming operations and processes providing integrated services in an effective and efficient manner. This seeks to remove any barriers between different levels of government and across governments promoting customer-centric provision of services rather than government-centric. This level of service provides a high level of value to each of the citizens, businesses, government employees and departments (Seifert, 2003; Cordella, 2007; Irani, Alsebie, & Elliman, 2006).

Benefits of e-government

Resources are usually invested in any undertaking when the benefits calculated or projected can outweigh all the costs involved. In regard to e-government, initial investment in its implementation and adoption may be high; however, there are many benefits that can be accrued in the long term. These benefits include reduction in cost, time and effort in the delivery and access of services, development of ICT skills and knowledge, creation of opportunities for businesses, investors and job seekers, increased transparency and accountability, greater convenience and access to information, quality of decision making and promotion of collaboration and integration, all leading to improvement in the provision of public information and services delivery (Alshihi, 2006; Shareef, 2012; Ndou, 2004).

Challenges of e-government

Although e-government can be planned and developed in stages, there are challenges that are to be addressed for its successful implementation and usage.

Many developing countries in different parts of the world show that they face similar challenges when deciding to adopt e-government. In their study, Alshehri and Drew (2010) identified several challenges facing developing countries such as lack of infrastructure, lack of promotion and awareness programs, lack of security, privacy and trust, and lack of strategic planning. Other challenges include resistance to change, lack of financial resources, lack of policy and regulation, lack of qualified personnel and training, lack of leadership and management support, lack of partnership and collaboration, and cultural differences.

Qaisar and Ahmad (2010) also identified similar challenges related to infrastructure and literacy, the lack of a professional workforce, handling resistance to change, and the lack of collaboration and commitment from top management and leadership.

When these challenges are properly addressed and e-government systems successfully implemented, governments and their clients can really gain from the benefits of e-government. Not only does PNG face many of these challenges, but also other issues.

Issues in PNG

Lack of effective government in PNG is a reality in our society today(Nelson, 2003).PNG face many issues such as organised corrupt activities and practices and lack of efficiency in many important government departments and organisations, resulting in poor public service delivery (Nelson, 2003). Violation of proper business practices and regulations, disregard and breaking of accepted administrative procedures, rules and standards, accepting bribes and inappropriate misconduct for personal gain cost the government much in terms of unnecessary resources.

According to Kenneth (2014b) the government spends millions of kina on accessing ICT services each year offered by telecommunication companies. For example, the government spends about K160 million every year on internet and telephone services. This could be one reason why the PNG government launched an Integrated Government Information System (IGIS) project to connect the various government departments. It is anticipated that this system will save the government K120 million per year from internet and telephone services. This system should set a foundation for successful e-government systems. The government also is introducing a system to address the problem of time stolen by public servants in order to reduce its associated costs and improve educational service delivery (Kenneth, 2014c).

Again, as stated by Kenneth (2014c) the government wastes a lot of money each year due to the lack of proper management and monitoring of public servants and their payments. Overpayments to public servants are costing the government about K200 million. Many public servants in many provinces spend less than 50% of their time and this is costing about K6.25 million. This may be occurring because public servants miss several working days engaging in personal

activities, arrive for work late or finish early. This implies that public servants are receiving pay while not working. These figures can suggest that similar amounts of financial resources are also spent on activities, functions and services with low quality in value.

An indicator-based expert assessment conducted by Global Integrity (2012) in collaboration with Australian Agency for International Development (AusAID) and the Consultative Implementation and Monitoring Council (CIMC) show that there is the lack of proper coordination and collaboration between different levels of government. It also revealed some interesting facts about access-to-information in health care service delivery in PNG. Health related information such as budgetary information, transfer of financial resources to health clinics and a code of ethics for medical professionals is not readily available or accessible due to lack of proper coordination between the different government levels and departments in the health sector. Information on diseases, prevention measurements and awareness programs are rarely made accessible to citizens. Personally going to the provincial health office or health clinical centre is probably the main way to access that information. This can also suggest similar lack of integration in other sectors.

Another study conducted by Singh, Pathak and Naz (2011) in PNG and Fiji revealed that 'the expectations of citizens from public services are quite high, but experience has often been negative regarding service delivery and quality of services' (p.371).Citizens and businesses pay taxes every year such as income, goods and service, and company tax. They vote representatives every five years expecting improved government and services. However, they often appear to be not served well by the government and their expectations not met satisfactorily. Singh, Pathak and Naz (2011) suggest that these problems can be addressed effectively through e-government technologies.

Case for e-government in PNG

The issues discussed above suggest a need for technology such as e-government to help reduce identified problems, improve delivery of high quality service and provide results that meet the needs and expectations of citizens. E-government is not an end in itself, but a tool or a means to an end, which governments can use to increase efficiency in service delivery. It would seem, therefore, necessary and desirable for PNG to embrace e-government as a tool for achieving effective government and governance, as described below.

E-government has the potential to reduce cost, time and effort involved in the delivery of information and services. It can assist in reducing or controlling redundancy and enhance internal functions and processes. Clients will spend less money, time and effort in accessing information and services from the government because e-government provides greater convenience and access (Alshihi, 2006; Shareef, 2012; Ndou, 2004).

Opportunities can be created by the introduction of e-government for businesses, investors and job seekers (Alshihi, 2006; Shareef, 2012). Although this

introduction may cause some to lose employment because jobs are now being computerised, it can also create others at the same time. This can motivate employees to learn new ICT skills and knowledge to remain in their employment or enter these newly created areas of employment. When clients use e-government services, the process should assist in the development of their skills and knowledge and reduce the gap created as result of the digital divide between those who have digital skills and those who do not (Alshihi, 2006; Shareef, 2012; Ndou, 2004).

Operations and procedures can be streamlined and storage and access of data can be controlled and monitored through the use of e-government systems. This can contribute to the reduction of dishonest activities in the government and public sector organisations, thereby, increasing transparency and accountability (Alshihi, 2006; Shareef, 2012; Ndou, 2004).

Not only can the delivery of information and services improve but the quality of decision-making as well. This can be made possible because having access to information enables citizens and businesses to make well-informed quality choices (Ndou, 2004). For example, access to information about legal requirements helps clients to become more responsible because they understand the possible consequences of failing to observe laws.

E-government can also enable government departments, public agencies and private sector organisations to work together, exchange information and speed up their processes and functions, promoting collaboration and integration, and improving efficiency and effectiveness (Alshihi, 2006; Shareef, 2012; Ndou, 2004).The prime minister of PNG, Hon. Peter O'Neil, when launching the IGIS project, claimed that through this system 'government departments and agencies would be better integrated, work in a more coordinated manner, and utilize technology effectively to serve the people of our country. This communications infrastructure today would increase efficiency in public service delivery' (Kenneth, 2014a).

These claims suggest that e-government has the potential to reduce current waste and contribute to the effectiveness and efficiency in providing services by the government to its clients. A study conducted by Singh, Pathak and Naz (2011) confirms that effectiveness, efficiency and equity in public service delivery can be achieved through e-government leading to quality of service provided. E-government can also contribute towards achieving the guiding principles of the Medium Term Development Strategy (MTDS) 2005 – 2010 and the objectives therein.

MTDS 2005-2010

The Medium Term Development Strategy 2005-2010 (MTDS 2005 – 2010) provides ten guiding principles aimed towards achieving economic and social advancement(Department of National Planning and Monitoring, 2004).Four of these principles are improvements in quality of life, integrating the three tiers of government, partnership through strategic alliances, and empowering Papua

New Guineans and improving skills. E-government can assist in achieving these four principles.

E-government can help integrate the three levels of government – national, provincial and local – enabling them to collaborate, share information and work together. It can also aid partnerships formed through strategic alliances to work collaboratively. It can also empower citizens by providing interactive access to and use of information, services and appropriate technologies. This in turn can develop their skill sets, preparing them to be effective contributors to the economy and improve the quality of life for many (Department of National Planning and Monitoring, 2004).

Citizens, businesses and NGOs want information and government services and to have their queries resolved on time (Kenneth, 2014a) as stated by PNG Prime Minister, Hon. Peter O'Neill, during the launching of the Integrated Government Information System. He admitted that:

> our people want access to government information relating to services and regulations, and when they have a question - they want that question to be answered promptly. It is important for all governments to continue to embrace emerging information and communications technologies. Our government recognizes this need and is expanding our use of technology to engage with the people of Papua New Guinea, and to better coordinate the delivery of government services. It will also help us in realizing our specific targets under Vision 2050 and its cascading developments plans and strategies (Kenneth, 2014a).

Discussion

Many developing countries have been shown to face similar challenges in the process of embracing e-government. In order for PNG government to successfully implement e-government and have it be adopted by clients, it needs to carefully address these challenges related to ICT infrastructure, promotion and awareness, security and privacy and trust, strategic direction and planning, resistance to change, availability of qualified professionals, leadership and management support, partnership and collaboration, and cultural differences. When these challenges are effectively addressed and successfully adopted, PNG should experience the benefits that e-government could bring with it, and reduce many of the problems we face today in PNG.

Many clients have high expectations from their government in providing high quality information and delivering services, however, experiences have so far usually been negative. There is poor delivery of services and even if services are delivered to some level of extent, the quality has always been very low. These have resulted due to dishonest practices, lack of efficiency, lack of direction and planning, unwise spending, improper management and control, inappropriate conduct, misbehaviour and lack of ethics, lack of transparency and accountability. Embracing e-government can assist in reducing these problems.

The four-stage models discussed can be used to determine the extent to which e-government is successfully adopted by governments, and also plan for its development. The level of e-government development in PNG is at its infant state of the presence and information stage of the four-stage models previously discussed. PNG government can use the four-stage model or a similar one to plan the development of e-government by stages across a number of years until e-government is successfully implemented throughout all levels of government. Lessons learned from other countries can be investigated and use for successful planning and development.

It can also help to reduce cost, time and effort involved in delivery and accessibility of these services by the government and its clients respectively. For example, processing of passports electronically should require less cost, time and effort than traditional means of paper based applications. It is able to help clients to make better well-informed choices because they will now have access to essential information. E-government will also help develop their ICT knowledge and skills of citizens as they embark on using electronic services.

It will also improve and increase transparency and accountability within the government sector, hence, reducing corrupt activities and practices resulting in wastage of public resources for personal gratifications. For instance, proper recording and tracking of financial transactions should help public servants be more responsible in their daily activities. It will enhance collaboration and integration between government departments and agencies such as departments exchanging project information quicker electronically to complete projects within time and budget.

As an ultimate result, e-government can help improve efficiency and effectiveness of public information and services delivery, hence, provide greater access to information and services. Therefore, it is desirable and essential to adopt e-government in order to improve the delivery of high quality services, and meet the needs and expectancies of clients in PNG.

Conclusion

This paper has argued the case for e-government in PNG. It described what is understood by the term of e-government, its types and stages and used it to identify that e-government in PNG is at the bottom level of stage one of the four-stage models, with only a very small number of government institutions providing basic information online.

It explored some of the challenges of e-government adoption many developing countries like PNG face including lack of infrastructure, promotion and awareness programs, security, privacy and trust, strategic planning, financial resources, policy and regulation, qualified personnel and training, leadership and management support, partnership and collaboration. Others include resistance to change and cultural differences.

It also discussed some of the benefits of implementing and using e-government services such as reduction in cost, time and effort, development of ICT skills, creation of opportunities for businesses, investors and job seekers, increased transparency and accountability, quality decision making and promotion of collaboration and integration, all assisting in improvement of provision and access of information and services.

Even though there may be limited financial resources, the stages of e-government can be used for planning and development of e-government systems in PNG, reduce many of the problems and produced expected benefits.

Future research can explore how e-government can improve public service delivery, the possibilities of e-government and how e-government might make government services more available to people living in remote areas particularly in rugged terrains difficult to access.

Acknowledgements

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Glossary

Clients – Citizens, businesses, government offices and employees that interact with the government for information and services

E-government (electronic government) – use of information and communications technology and internet technologies to provide information and deliver services online

E-government service – services which can easily be delivered through e-government systems

Government-to-citizens (G2C) – type of e-government that enables governments to interact with citizens in providing information and services.

Government-to-businesses (G2B) – type of e-government that enables governments to interact with businesses in providing information and services for businesses.

Government-to-government (G2G) – type of e-government that enables governments to interact with other government offices and public agencies in providing information and services to facilitate the other e-government services

Government-to-employees (G2E) – type of e-government that enable governments to interact with their employees in providing internal information and services for employees.

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