Electronic government equals sustainable development for Guyana

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Abstract

Electronic government (e-government) equals sustainable development for Guyana. This is the thesis illustrated by this paper along with the possible constraints involved in implementing e-government. These constraints range from the mindsets of the public servant, the private sector employee, and the citizen to the economics of changing from the present situation where a hotchpotch of business is carried out in a time-consuming manner with lots of paper and perhaps a few computers thrown in for good measure but with no real connection or relation to what the work of the office/department actually requires. While the cost of procuring hardware, training staff, educating the citizenry in e-government is no small feat, it is achievable through effective planning.

Using a literature review, the experiences of other country strategies for implementing e-government are analysed both in terms of their successes as well as the constraints they experienced.

Through interviews with those representing the youth and the elderly, a public servant (a clerk employed in a Ministry), various professionals including an Attorney-at-Law and IT specialists, and a non-governmental organisation (the Guyana Association of Women Lawyers), it became apparent what is important to them in terms of e-government. We learn what areas in their knowledge and competence have improved due to the implementation of e-government to date, and what further strategies may be employed for using e-government for the sustainable development of Guyana.

This paper concludes that effective planning involving all stakeholders and the gradual assimilation of information and communication technology (ICT) and e-government into the mainstream development goals of Guyana appears to be the most effective and sustainable way to implement e-government for the sustainable development of Guyana. The lessons learned by other countries may be used to avoid similar pitfalls for Guyana, hence, the country may benefit in no small measure by being late off the starting block when it comes to the implementation of e-government for sustainable development.

Keywords: Guyana; ICT; sustainable development; e-government; electronic government

Introduction

After reviewing the various benefits of e-government and considering the hurdles and pitfalls attendant to implementing e governance, we arrive at the conclusion that e-government equals sustainable development for Guyana.

The data used comprises a literature review, mainly of online material, to evaluate best practices and results from other countries. This indicates lessons learned by those countries and facilitates better decision-making in determining what practice may or may not be successfully used in Guyana. A qualitative methodology – interviews – was used to gain the perspective of stakeholders such as government ministries/departments, the private sector, citizens, students who would avail of services such as filing of tax returns, passports applications, online University applications, and online education.

Limitations include the lack of availability of information on Ministry websites e.g. the Ministry of Labour Human Services and Social Security (MLHSSS; http://www.businesspatrol.com/country- links/out_link.php3?id=10822).

The paper begins with a discussion of the importance of e-government to development, and the possible constraints as well as a review of relevant literature on the topic. This is followed

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by a brief discussion of Guyana's development strategies. Next, e-government as a development strategy is discussed and a connection is made between objectives highlighted in Guyana's National Development Strategy and e-government as facilitating the achievement of those objectives in a sustainable manner. In this section, two projects are highlighted which give examples of the implementation of sustainable e-government projects. This section also discusses the results of the interviews. The last section presents the conclusion of this paper.

E-government and development

There are several definitions of e-government but the one that is most relevant in the context of Guyana being a developing country is 'the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees' (Deloitte, 2000). While e-government is often thought of as 'online-government' or 'Internet-based government', many non-Internet 'electronic government' technologies can be used in this context. Some non-Internet forms include telephone, fax, Short Message Service (SMS) - text messaging, Multimedia Messaging Service (MMS) - text messages that include multimedia and extends the core SMS capability that allowed exchange of text messages only up to 160 characters in length, and many others (Wikipedia, 2011).

Ochara-Muganda and van Belle (2010) state: '…e-government success, which is critically dependent on the World Wide Web, requires success frameworks that are context-dependent.' I agree that a large part of the success of e-government is based on access to the Worldwide Web but nonetheless, developing countries may, in circumstances of limited access, avail themselves of non-Internet e- government technology as first steps. Connectivity within and among Ministries and sharing of data will, as first steps, garner positive results for a developing country such as Guyana.

In fact, Ochara-Muganda and van Belle (2010) state: '…e-government should not be conceptualized primarily as from a technological perspective but as a tool to build of social, human, digital and physical resources in order to empower individuals, communities and whole societies.'

Constraints

For technology to be used in an effective and sustainable manner, a number of constraints must be borne in mind.

- Technological feasibility of the proposed technology.
- The often limited ability and willingness of public institutions to cooperate with each other.
- The extent to which the citizen has access to the appropriate technology: whether a desk top or laptop computer, a cellular phone or landline telephone (von Haldenwang, 2002).
- Lack of proper planning in terms of sustainability of projects.
- Political constraints.

von Haldenwang (2002, p. 2) states: '…while immediate or overnight success may not result from e-government, substantial changes towards good governance, both in terms of administrative capacity and democratic governance' may result. He goes on to state that for these changes to occur, the use of the new technologies has to be incorporated into broader projects of state reform. Similarly, for e-government to result in sustainable development, there must be the gradual phasing in of new technologies into the broader projects undertaken by both state and private sectors. While pressure from the outside is helpful, usually an internal modernisation focus is needed in order for e-government to work (von Haldenwang, 2002).

It is now apparent, as von Haldenwang points out, '…information and communication technology (ICT) modernisation decisions can no longer be made by each particular institution in an isolated way.' A thorough review and understanding of the needs related to each service delivery area and the capabilities of citizens and businesses needs to be carried out and a solution based on the aforementioned needs to be offered. von Haldenwang cautions that '…efficiency gains due to e-government may turn out to be small or in some areas even null, due

to the fact that considerable investments have to be made up front, especially in cases where basic infrastructure is lacking … new technologies usually demand increased investment in maintenance, human resource formation, etc.' (von Haldenwang, 2002). von Haldenwang warns that 'given all these factors, it would be naïve to assume that e-government will always lead to cost saving and increased efficiency. Careful cost-benefit analysis *ex ante* seems to be indispensable in order to avoid unpleasant surprises.' (von Haldenwang, 2002).

The often limited ability of public institutions to cooperate with each other due to the interoperability of their ICT structures, i.e. the ability of computer systems to receive, read, and process data from other systems (von Haldenwang, 2002) is a constraint of great concern. Like many developing countries, public institutions in Guyana have often acquired ICT without caring too much about or understanding the benefits of its networking and cooperation capabilities. This may mean a total revamping of some existing systems. The willingness of public institutions to cooperate with each other must be considered in planning. Public education will be necessary to underscore the need for cooperation among public institutions and the fact that the citizen is not overly concerned with who does what. He or she is just happy to be able to complete transactions with minimum fuss and time and preferably in one place.

The extent to which the citizen has access to the appropriate technology: whether a desk top or laptop computer, a cellular phone or landline telephone must be considered. von Haldenwang points out that for the majority of countries worldwide, individual access through personal home computers will not be the typical way for citizens to connect to the Internet in the foreseeable future (von Haldenwang, 2002). Therefore, as done in Brazil and other countries, Guyana may consider the provision of public access points (such as *telecentres*) and training facilities. He adds that this leads to another constraint: in many fields of public administration, pre-existing routines have to be maintained in order to provide services for those who do not have access to new technologies, thus, obliging public agencies to offer multiple access channels (von Haldenwang, 2002). While this must be borne in mind, it is not necessarily a constraint that will accrue heavy costs in that technology will merely be simplifying what was done by a lengthy procedure but the procedure itself will remain.

Lack of proper planning in terms of sustainability of projects has been recognised as the cause of 'projects being implemented sporadically and in a piecemeal fashion, which in turn hinders the ability to define success and recommend best practices for implementing and/or scaling them' (Hosman and Fife, 2008). One of the first steps in implementing projects is therefore the development of long-term sustainability through focusing on the wants, needs, and characteristics of the local communities, and to consider the residents as project stakeholders (Hosman and Fife, 2008). In doing so one is able to successfully implement an ICT project in which locally appropriate technology is deployed. 'Locally appropriate' in this case refers both to the stated wants and needs of the technology recipients as well as to what is possible given the physical, geographical, and/or infrastructural reality on the ground (Hosman and Fife, 2008).

In addition, political constraints may be the most important. Many governments would be reluctant to appear to be cutting jobs and as a result may not be interested in any sort of reform, whether equipment and infrastructure or otherwise, once it may result in a reduction in staff (von Haldenwang, 2002). von Haldenwang further points out that if corruption is taken as an instrument to secure political support of key groups, there will be pressure to block the introduction of e-procurement, or limit it to minor purchases (von Haldenwang, 2002).

E-government as an aid to development

Interaction (provision of information, communication)

The provision of information can be seen as the first step to e-government. As a second step, new ICT solutions help to improve communication between citizens or private enterprises and the state. For citizens, being able

to file requested documents online or download forms from the Internet is a real advantage. Public institutions, too, benefit from ICT-based interaction, although the relation between internal efficiency gains and increased spending on service delivery may not always be positive (von Haldenwang, 2002), as mentioned earlier. von Haldenwang urges that Governments should keep in mind that so far only a small percentage of the world's population has access to the Internet. Therefore, e-government reforms should not be limited to interaction through the Internet, but through multichannelling instead: an administration that can be accessed by various ways (e-mail, Internet, call centres, one-stop service centres, etc.) is able to react more quickly and flexibly to consumer demands (von Haldenwang, 2002). He points out that many municipalities and public agencies have begun to group services around typical everyday situations, such as marriage, birth, loss of documents, or the registration of an enterprise. This reflects the fact that usually citizens and enterprises are not interested in who is responsible for what, but want their problems to be resolved quickly and cheaply (von Haldenwang, 2002).

Transaction

The third step to e-government consists in transacting administrative processes within one electronic medium. For this to succeed, it is crucial to develop solid working procedures between front offices – serving as interfaces between public administration and clients – and back offices, where the actual processing takes place. ICT-based transactions are especially important to enterprises, since their relations to public administration bear a higher cost and are usually more frequent than those of citizens. von Haldenwang gives an example of an area where private interest in smooth and user friendly administration and public interest in efficiency meets rather well: tax administration. He discusses the provision by the Treasury of the state of Bahia in Brazil, of the whole range of its tax services in terms of online transactions. Since not all of its clients have private Internet access, the state provides public access points (*pontos de autoatendimento*). In 2001, 1.1 million requests were transacted online, whereas 576 000 were attended through traditional channels (von Haldenwang, 2002).

Efficiency (increase of internal or production efficiency resulting in savings)

E-government is expected to increase the internal or production efficiency of public institutions, thus saving taxpayer's money. This may be achieved by:

- raising labour productivity and cutting employment by means of the automation of administrative procedures and the simplification of processes; and
- lowering the costs of public procurement by means of providing better information on prices, promoting market competition and offering more transparent and market-friendly purchasing procedures.

Raising labour productivity

ICT may be used as a device to raise labour productivity by first creating networks and the automation and simplification of procedures *within* a given institution. According to von Haldenwang, the digitalisation of documents and procedures may be regarded as a first step towards electronic workflow management, since it offers substantial efficiency gains without requiring profound changes of internal procedures. He gives the example of the city of Hamburg, which was currently working on the digitalisation of document archives in eight of its offices and points out that 'Internal studies have shown that public employees in the City of Hamburg dedicate up to 5 percent of their workload to the search of documents' (von Haldenwang, 2002, p. 4). This is ideal for Ministries and particularly the Supreme Court Registry, the Deeds Registry, and the Land Registry where a large percentage of the workload is the search of and for documents to ascertain the status of matters.

While e-government reforms may very well start at the periphery of administrative structures and procedures, as von Haldenwang points out, it is crucial to make sure that reforms do not stop there, but are subsequently broadened

to cover core activities (von Haldenwang, 2002). Automation is especially useful in the case of activities requiring repetitive steps and mass proceedings, such as registration, filing or reporting (von Haldenwang, 2002). Again, there are many Ministries including the Supreme Court Registry, the Deeds Registry, and the Land Registry where a large percentage of the workload comprises repetitive steps and mass proceedings.

Secondly, ICT may be used as a device to raise labour productivity by introducing ICT-based co-operation *between and among* administrative entities. A crucial advantage of e-government lies in the intensification of information and communication flows, many times cutting through traditional hierarchies and administrative routines. Whether the aim is the establishment of local one-stop shops, or the enhancement of Ministries' functions, a certain degree of co-operation between different public agencies is inevitable.

According to von Haldenwang, reforms may even begin in areas outside the core competencies of participating institutions. He gives the example of the Brazilian state of Bahia, and the creation of integrated public service centres (*Serviços de Atendimento ao Cidadão – SAC*) with up to 27 institutions offering up to 550 services, which has led to an incipient cooperation with respect to personnel and the delivery of services such as the issuance of personal IDs. Although each agency maintains its own ICT infrastructure and procedural routines, all work stations are connected to the SAC network. This allows the SAC administration to control the flow of clients, the duration of procedures, the time citizens have to wait until they are attended and even the personal performance of each single employee. In case of necessity, personnel may be shifted from one agency to another (von Haldenwang, 2002).[1]

It is recognised that cooperation between different public institutions as in the example given above, depends increasingly on the interoperability of ICT structures, i.e. the ability of computer systems to receive, read, and process data from other systems (von Haldenwang, 2002). This will have to be specifically addressed in Guyana's case because in Guyana, like so many developing countries, public institutions have often usually acquired ICT without caring too much about or understanding the benefits of its networking and cooperation capabilities.

Lowering the costs of public procurement

Another tool to enhance public sector efficiency consists in lowering the costs of public purchases of goods and services. As a matter of fact, e-procurement has rapidly become a favourite of reform-oriented (and resource-strained) governments worldwide. Although there has been little systematic evaluation of e-procurement so far, anecdotal knowledge indicates a clear trend towards higher transparency and market competition, and considerable savings for public budgets (von Haldenwang, 2002).

Quality of Public Service delivery

While raising internal efficiency is a primary reason for public institutions to embark on e-government, many times, ICT is employed primarily in order to improve service delivery vis-à-vis citizens or the private sector, in an attempt to strengthen the allocative efficiency of public administration and statal regulation. Allocative efficiency 'measures how well service or infrastructure bundles match consumer preferences' (von Haldenwang, 2002). This means that the total, not only the public institution's, allocation of factors has to be taken into account. If a personal ID can be issued within one hour on the basis of ICT solutions whereas before such reform it took 30 days requiring citizens to queue up for two days in different public agencies, the allocative efficiency may be considerably higher even if the state spends more on the delivery of that specific service. In this context, e-government relates to *New Public Management* (NPM) approaches which put the *outcomes* of administrative action in the centre of quality assessment (von Haldenwang, 2002).

1 These observations are based on a field visit to Brazil from July 15 to 30. See also http://www.sac.ba.gov.br

Development strategies in Guyana

Guyana's National Development Strategy is largely based on the following five objectives (SDNP, 2000):

1. Economic growth.
2. Poverty alleviation.
3. Geographical unity.
4. Equitable distribution of economic activity.
5. Diversifying the economy.

The first and main objective of economic growth is seen as a precursor to the attainment of the other objectives of the strategy. Geographical unity, the third objective is aimed at 'integrating the country spatially so that all its regions can become full partners in every sense' (SDNP, 2000). The strategy recognises the particular importance of this to Guyana as it is yet to overcome the difficulties and costs of internal transport and the divisions which continuously appear to be growing in the society (SDNP, 2000). It is hoped that the attainment of this objective would also, as a matter of course, lead to the penetration of the interior and to a more rational distribution of the country's population. While ICTs cannot close the physical distance between the interior regions of Guyana and its capital, Georgetown, it can greatly reduce the seeming distance between them and may facilitate a more rational distribution of the country's population by opening areas of economic activity which in turn may increase movement towards and within the interior regions of Guyana. The National Development Strategy describes the equitable distribution of economic activity, the fourth objective, as complimenting the third objective of geographical unity. The primary purpose of the equitable distribution of economic activity is the removal of the disparities in income and economic activity among the regions, and support of the process of shifting the country's population from the coast to the interior regions of Guyana (SDNP, 2000). Again, while economic activity is now mainly anchored in the capital and on the coast of Guyana, there are existing economic activities which can be greatly increased and modernised by the use of ICTs. In addition, the use of ICTs can create economic activity in the interior regions by encouraging innovation and extension of what may currently exist as a cottage industry for the community market to a wider market reached via the internet.

E-government as a development strategy

It has been shown that while 'e-government is the use of information and communication technologies (ICTs) to improve the activities of public sector organisations' (Heeks, 2002), in addition to using the tools and systems made possible by ICTs to provide better public services to citizens and businesses, effective e-government also involves rethinking organisations and processes, and changing behaviour so that public services are delivered more efficiently to the people who need to use them (EC, 2011). It is also said that once implemented well, e-government enables all citizens, enterprises, and organisations to carry out their business with government more easily, more quickly and at lower cost (EC, 2011).

As a development strategy, e-government may be used for the following:

- Immigration and registration of persons.
- The issuing and renewal of passports.

Guyana's National development Strategy notes that 'Information technology is used in Guyana in a very modest way.' It goes on to point out that 'in the Public Sector, Government has introduced personal Computers (PCs) to assist in its general administration…' but that 'they employ them, however, in a somewhat rudimentary manner' (SDNP, 2000).

E-government may address these issues with the following results:

- Time saved by those applying for passports may be used in a more productive manner.
- A reduction in human resources utilised by the office. These may be employed elsewhere.
- A reduction in other resources after initial expenditure to procure the necessary ICTs.
- A database constructed by the immigration department may be shared with/utilised by the Guyana Elections Commission (GECOM) to construct or cross check the Voters' list. Alternatively, should there be a database in use by GECOM, the Immigration

Office may use it to cross check applications coming in and use that data to whatever extent possible, instead of having to input into a database all data presented by the applicant. GECOM in turn may use data compiled by the Immigration Office to compile or check the Voters' list. Both offices will save time, human and other resources while being far more efficient: a more accurate Voters' list produced, time and other resources saved by having to carry out fewer additional reviews of the Voters' list, reissuing of ID cards.
- Both offices will be better equipped to detect fraud such as double registration of individuals, someone applying for a passport under a fictitious name, padding of the Voters' list with deceased or fictitious persons, etc.

Other offices dealing with related matters may also share data, with similar time and cost savings and fraud-detecting results:

- The General Register Office, the Statistics Bureau, and the Supreme Court Registry may also utilise and share data for the benefit of all offices. The data compiled by the General Register Office which records births, marriages, and deaths, may be utilised by the Immigration Office and GEOCOM to facilitate the preparation of the Voters' list and check the veracity of applications before the Immigration Office. In fact, in some countries, the General Registrar's Office is part of the Identity and Passport Service. In addition to or while implementing e-government, the offices may also be reformed and restructured in a like manner.
- The Guyana Bureau of Statistics (BoS), which compiles statistical data may also share and utilise data compiled by the aforementioned offices.

The Supreme Court Registry, which requires much of the data compiled by the offices mentioned, may utilise data prepared by those offices and or share the data they have compiled in producing the jurors' list, which is required for the Criminal assizes. The computerisation of the Supreme Court may also address two other very important issues, *viz*, a reduction in the time spent updating and locating court documents and the fact as pointed out in the NDS that 'Guyana's courts are not supported by modern technology. Computers are virtually unknown. Indeed, the equipment that is currently utilised is often so obsolescent that spare parts cannot be obtained for them. In addition, the organisational structure of the administration which manages the judicial system is, at best, very early twentieth century (SDNP, 2000, Chp. 3). While the issue of the administration of the judicial system is not within the purview of this paper, the computerisation of the Supreme Court Registry and by extension, the Courts, will positively impact the courts and their daily operations and facilitate the rendering of decisions in a timelier manner. The digitalisation of documents and procedures as referred to by von Haldenwang, may be utilised in the Supreme Court Registry to provide substantial efficiency gains without requiring profound changes of internal procedures (von Haldenwang, 2002). Like the example he gives of the city of Hamburg, a large percentage of the workload in the Supreme Court Registry, the Deeds Registry, and the Land Registry is the search of and for documents to *inter alia* ascertain the status of matters.

As a development strategy, e-government may be used for the following:

- Education: application for placement in schools and universities.
- Online education.

Guyana's National Development Strategy points to the fact that many Amerindians have traditionally been excluded from mainstream educational opportunities due to the fact that a large part of the Amerindian population lives in the interior regions of Guyana where there are not enough schools, or trained teachers of both Amerindian and non- Amerindian descent. Education for Amerindians should be wide in scope and tailored to their specific needs. It goes on to point out that 'the inability of government to address these constraints has resulted in a lack of educational opportunities for Amerindians' (SDNP, 2000).

E-government may address hese issues as follows:

- The data referred to above (and other nec-

essary assessments such as meetings with the target groups) may be used to identify and organise the population of the interior regions (which comprises mainly of Amerindians) by *inter alia*, numbers, age, and needs.
- This data may then be effectively used by the Ministry of Education, in collaboration with other relevant ministries to plan to meet those needs, possibly by building a certain number of schools for physical teaching where feasible. Where not feasible to do so, online and distance education may be used to prepare the residents of the areas targeted, in formal and other education in order to improve their standard of living.

In addition to the specific needs of the Amerindians, the first steps to be taken towards meeting the five main objectives of Guyana's National Development Strategy – economic growth, poverty alleviation, geographical unity, the equitable distribution of economic activity and diversifying the economy (SDNP, 2000) – have mostly to do with the general education of the population. As Hosman and Fife (2008) point out, projects that bring ICT to the developing world – and especially to rural areas – have the potential to empower the disenfranchised, foster economic opportunity, and narrow the digital divide that threatens to widen global disparity between the haves and the have-nots.

In addition to the above suggestions with regard to Amerindians, e-government may address the issue of the general education of the population as follows:

- The data already compiled (and other necessary assessments such as meetings with the target groups) may be used (as done with Amerindians) to identify and organise the population of Guyana by *inter alia*, numbers, age and needs.
- This data may then be effectively used by the Ministry of Education, in collaboration with other relevant ministries to plan to meet those needs, again, by either building schools for physical teaching where feasible and where not feasible to do so, online and distance education may be used to prepare the residents of the areas targeted, in formal and other education in order to improve their standard of living.

Having carried out a proper assessment of the population of the country steps should be taken to ensure a country wide education in the use of ICTs within the current education system (targeting school age population) **as well as** for out of the current education system, so as to target the population above school age. As mentioned before, it is unlikely that individual access through personal home computers will be the typical way for citizens to connect to the Internet in the foreseeable future (von Haldenwang, 2002). Therefore, governments like Guyana's should encourage the provision of public access points (such as *telecentres*) and training facilities.

Hosman and Fife (2008) point out that it is important that partnerships are formed to carry out projects. In many cases, this can be done through private or third sector initiative. They say that some question whether partnerships involving the private sector are the best way for public entities in the developing world to advance with infrastructural endeavours or to provide public goods. In response to this concern she posits that such projects often do not advance at all when left to developing country governments' own resources and initiatives. For the public partner, such partnerships offer attractive advantages, such as increased private investment, technological experience and expertise, risk-sharing, and a potential decrease in governmentally subsidised programs (Hosman and Fife, 2008). Two projects referred to by Hosman and Fife (2008) which may be useful in guiding Guyana's use of e-government as a development strategy are:

1. EasySeva (or Easy Service in the local languages).
2. USAID's Last Mile Initiative in rural Vietnam.

EasySeva is the name given to a for-profit franchise service centre project designed to bring affordable broadband wireless telecommunications and Internet technology to rural areas of Sri Lanka. It is a partnership involving multiple local and international partners from numerous sectors of relevant industries. The aim of the

EasySeva project is to empower the rural communities to avail themselves of ICT in order to improve their quality of life, as well as their economic status (SSG, 2007). The EasySeva business strategy is built around a franchising model. Local entrepreneurs – generally those already employed in mobile phone 'top-up' shops or in dial-up cyber cafés – are identified (by the local phone companies through which they are employed), interviewed, and recruited to establish village-level kiosk franchises that provide Internet and telephone access to the local population. Through EasySeva, the potential franchisees are offered the opportunity to start a business by purchasing a low-priced kiosk package, or 'Center/Franchise-in-a-box', which consists of four reconditioned personal computers (PCs) with a licensed suite of Microsoft Office products, an all-in-one printer/copier/fax machine, broadband connection via Dialog Telekom (which is either through WiMAX1 or HSDPA2 technology), and one or two Voice over Internet Protocol (VoIP) enabled telephones (SSG , 2007). There are two major technological advances that have enabled this project's realisation and hold promise for revolutionising similar ICT undertakings across the developing world: wireless broadband and VoIP. These technologies are both revolutionary and enabling in a number of ways. Utilising wireless broadband means that the expense of laying fixed-line wires or cables is avoided, bringing cost savings for all parties involved. WiMAX and HSDPA are also relevant technological advances: they increase the distance that modems can supply an Internet connection, which translates into cost savings.

VoIP technology is this project's primary voice communications application. As a result, both Internet connectivity and voice-related communications are enabled through a single technology deployment. This combined provision of Internet and voice in a single technology minimises both short-term and long-term costs, as VoIP over broadband presently represents the least-expensive method of communicating over long distances. It also addresses the issue of providing the service currently most in-demand in the developing world – voice communications – while simultaneously providing Internet connectivity, for which demand may increase over time. Enabling residents of rural villages to make both local and long-distance calls at minimal cost provides increased efficiency in planning and communication; this can lead to economic growth (Hosman and Fife, 2008).

The emphasis of the USAID Last Mile Initiative in rural Vietnam (Hosman and Fife, 2008), was on enabling voice communications, as this was the capability the local residents expressed the most desire to have. The project made use of three notable technological innovations to lower costs and increase effectiveness for the ICT recipients: Voice over Internet Protocol (VoIP), Satellite and/or WiMAX technology, and solar power. VoIP represents the least expensive method of voice communication known today (Hosman and Fife, 2008). The WiMAX technology enabled the network to be available across a larger geographical area than was previously possible, and avoided the prohibitively expensive costs of laying telephone lines. Solar powered modems and Wi-Fi towers obviated the need for a reliable electricity source (solar mobile phone chargers are also available). These technological innovations effectively minimised both short-term and long-term costs by enabling both voice communications – the locally desired capability – and Internet service, for which demand may increase over time, with a single technology deployment. They also found a way around what had previously been considered a necessity: a reliable source of electricity (Hosman and Fife, 2008).

The two projects discussed illustrate that technology has, through both invention and application, rendered some traditional stumbling blocks to ICT implementation obsolete. They also illustrate that when projects are well thought out, technologically appropriate, and designed with long-term sustainability and the empowerment of the localities in mind, they can bring about real socio-economic benefit in the basic needs areas mentioned (Hosman and Fife, 2008).

This is of particular importance to Guyana, where, right now, computers are being procured for distribution and it appears that proper planning has not taken place. Fortunately, there is time for intervention and the policy-makers have been hearing the suggestions of the stakeholders and are apparently rethinking the original strat-

egy of 'one laptop per household' to possibly 'laptops within communities' and 'laptops for NGOs'.

The interviews carried out reflect that people are mindful of the benefits of e-government and all have an opinion on how the computers ought to be distributed. All interviewed point to saving time on transactions. Other benefits include the interest of youth in schools benefitting from e-government by placing more computers in schools to assist the teaching of ICT as well as a resource in libraries (both school and community) to facilitate students studying and carrying out research. Youth are also interested in cafés or public access points to train both adults and students and thus enhance the computer literacy of the people of Guyana. In addition to saving time, the elderly saw e-government as a way of allowing the elderly and disabled better access to services. The Public Servant was appreciative of the time saved by the modest computerisation at her Ministry. Where a search at the request of a client for a simple update of the status of a matter, would previously take between 15 to 20 or 30 minutes, it now took as little as 5 to 10 minutes. The computer gives an immediate status report of every aspect of the matter. The Public Servant also saw time saved in the time it took for documents to be prepared by computer as opposed to a typewriter (yes, there are still typewriters in Guyana). The NGO representative pointed to time being wasted where fax machines are not available or are not functional and time is wasted in physically taking a hard copy of a document to another Ministry for signature. She saw time also being wasted where communication is sent by electronic mail but is not read at all or not read in a timely manner because of a lack of computers or Internet access. With respect to the distribution of computers, all interviewed saw them being better placed at public places as opposed to within an individual household. Schools, community centres, and cafés were suggested, monitored possibly by NGOs or other community leaders, with strict monitoring and deadlines. This would ensure a wider and more equitable cross section of people participating and greater security of the investment. It was also suggested that computers be placed in Internet cafés and their use, including for secretarial services, could generate income to help sustain the initiative. This is exactly as discussed by Hosman and Fife (2008) in the EasySeva project. The letter of introduction, blank questionnaire and one completed questionnaire are attached hereto as Appendix 1.

Conclusions

While many constraints have been shown, it has also been shown that e-government equals sustainable development for Guyana. Many examples of the successful implementation of e-government have been shown and the underlying theme is that planning involving stakeholders is a major prerequisite for its success.

As stressed by Hosman and Fife (2008) and as shown from the interviews, starting from the bottom-up and not the top-down helps reveal the wants and needs of the people who will ultimately determine whether any project is successful in the short and long term. Locally relevant programmes can only be designed with an in-depth knowledge of the potential technology recipients; this includes such diverse considerations as the understanding of societal norms, literacy levels, employment options, weather-related concerns, factional/religious/ethnic sensitivities, government openness or repression, and so forth. The list – which could continue without end – serves to illustrate that digital divide projects can never be considered one-size-fits-all propositions. Local stakeholders must be the central focus of any and all such undertakings (Hosman and Fife, 2008).

References

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APPENDIX

Letter and questionnaire

Dear Interviewee,

Re: Whether Electronic Government equals sustainable development for Guyana

I am soliciting your comments/views in relation to whether electronic government (e- government) equals sustainable development for Guyana. E-government is 'the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees'.[2] While e-government is often thought of as 'online-government' or 'Internet-based government', many 'non-Internet electronic government' technologies can be used in this context. Some non-Internet forms include telephone, fax, SMS text messaging, MMS, and many others.[3]

Grateful for your responses to the questions set out in the questionnaire below and any other comments/suggestions you make wish to make in response to the issue.

Regards,

Sandra Bart

2 Deloitte Research – Public Sector Institute At the Dawn of e-Government: The Citizen as Customer, 2000. http://en.wikipedia.org/wiki/E-Government
3 Wikipedia. http://en.wikipedia.org/wiki/E-Government

QUESTIONNAIRE (blank)

1) Representative group [please tick as appropriate]
   - Youth – age …….....
   - Elderly – age …….....
   - Clerk – area of work …….....
   - Professional – Attorney-at-Law/Information Technology Specialist
   - Non-governmental Organisation – focus of organisation …….....
   - Other …….....
2) Identify areas in which in your experience or knowledge, time is wasted by individuals and public servants in the delivery of services.
3) Quantify the time wasted for each area identified at 2) if possible.
4) Identify examples of how you see e-government as avoiding/reducing this wastage in a sustainable manner?
5) Computers have been/are being procured for distribution throughout Guyana. What is the most sustainable manner in which these may be distributed?
6) How should these computers be used?
7) By whom should these computers be used?
8) For what purposes should the computers be used?

QUESTIONNAIRE (completed)

1) Representative group [please tick as appropriate]
   a. Youth – age …….....
   b. Elderly – age …….....
   c. Clerk – area of work …….....
   d. Professional – Attorney-at-Law/Information Technology Specialist
   e. **Non Governmental Organisation** – focus of organization **X Education of citizens (especially women and children) on their legal rights** …….....
   f. Other …….....

2) Identify areas in which in your experience or knowledge, time is wasted by individuals and public servants in the delivery of services.

   In areas where there is little availability of technology that is operational. Insufficient use is made of fax. This is particularly so in some-government offices, where they may be a fax, but it is not working or the officer did not think to use it. The document then has to be sent by hard copy only since a signature is important.

   In delivery of important documents.

   In the timely checking of e-mail etc

3) Quantify the time wasted for each area identified at 2) if possible.
   a. **Time wasted could be as much as a half day or a whole day.**
   b. **same as above**
   c. **Several critical hours**

4) Identify examples of how you see e-government as avoiding/reducing this wastage in a sustainable manner?
   a. **By ensuring that the relevant equipment is provided, services and operational ALL of the time.**
   b. **By developing protocols for use of technology, in particular e-mail. (E-mail is not appropriate in all instances e.g. circulation of confidential documents)**
5) Computers have been/are being procured for distribution throughout Guyana. What is the most sustainable manner in which these may be distributed?
   a. **Through school and community centre programmes using NGOs with strict monitoring and deadlines. This ensures a wider, more equitable cross section of persons participating, and security of the investment.**
6) How should these computers be used?
   a. **For schools, in preparation of SBAs and assignments and in the teaching and learning of ICT. Internet cafes in a limited sense could also be explored.**
   b. **For communities, training under a structured programme in use of computers could be one aspect. Likewise, internet cafes and secretarial services could generate income to help sustain the initiative.**
7) By whom should these computers be used?
   a. **By students in schools and all persons in a community with efforts being made to ensure that the less fortunate are specifically targeted.**
8) For what purposes should the computers be used?
   a. **Please see response at 6) above.**