Digital divide and e-governance in South Africa

by

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Abstract

The paper presents the findings of the results of the analysis of 31 South African government departmental websites. The research was conducted with the objective to investigate the development and implementation of e-governance in South Africa as well. The papers also attempt to investigate the relationship between the digital divide and e-governance as well as the current status of digital divide in South Africa. The methods used in this study was observation and content analysis of different government departmental websites. The finding indicate that South African government departments are utilizing websites to provide certain government services to the citizens. They seem to be taking advantage of the Internet and other Web facilities to provide citizens with access to electronic information and services. These indicate that the South African government has taken steps to address the digital divide. In order to improve efforts, the paper recommends that Government need to provide more training to the ordinary citizens on how to use these ICTs facilities to access e-governance service. They also need address the issue of human capital by ensuring that competent staff are appointed to develop and maintain e-governance service. They must engage with the industry in order to improve telecoms infrastructure. They also need to assist its citizens with access to affordable internet services so that these people should be able to use more of e-governance services. And they also need to allocate more funding on e-governance projects. These projects will require a lot of funds.

1. Introduction

The disparity in access to Information and Communication Technologies (ICTS) which may result from differences in class, race, age, culture, geography or other factors can affectively deprive certain citizens to participate in the global economy (Kroukamp, 2005). This disparity is known as the digital divide. There is need governments around the world to bridge the digital divide. Using the Internet to capture and provide access to appropriate and relevant digital information produced by governments could also contribute towards bridging the digital divide (Chisenga,2004).

 The idea of e-governance has changed the way in which governments communicate with one another and with their citizens (Kroukamp, 2005). In the past communication used to be via public meetings, printed media, radio and television. Today communication is also done via the modern information and communication technologies e.g the Internet and satelite (Kroukamp, 2005). E-governance involves new styles of leadership, new ways of debating and

deciding policy and investment, new ways of accessing education, new ways of listening to citizens and new ways of organising and delivering information and services (Tlagadi, 2007).

According to Chisenga (2004) government in Africa are the major producers of public information and could therefore contribute to bridging the digital divide by making information available to their citizens via the Internet. Governments in developed and developing countries are making increasing use of electronic to interact and communicate with another and with their citizens to deliver more effective services (Kroukamp, 2005; Mnjama & Wamukoya, 2007).

Internet is changing the way people live today. This implies that more and more people will rely on the Internet for information. Therefore if government has to reach out to this Internet population, they have to put their information and activities on the Internet via the websites.

Digital divide is defined as by Cullen (2003: 247) as the metaphor use to describe the perceived disadvantage of those who either are unable or do not choose to make use of ICT in their daily life. The Digital Divide Network (2004) defines the concept as the gap between those who have access to communication tools, such as the Internet and those who cannot.

The American Library Association (ALA), Office for Information Technology Policy (2000) defines the digital divide as disparities based on economic, status, gender, race, physical abilities and geographic location between those who have or do not have access to information, the Internet and other information technologies and services. Mariscal (2005:410) defines the concept as the gap between individuals, households, business and geographic arrears at different socio-economic levels with regard both to their opportunities to access information technologies and to the use of such technologies for a wide variety of activities.

E-government refers to the use of Information and Communication Technologies (ICTs) to improve the efficiency, effectiveness, operations, service delivery and accountability of government (The World Bank, 2006 as cited in Singh & Sahu, 2008; Kumar & Best, 2006; Kroukamp, 2005; Saxena, 2005; Turban et al, 2004). E-governance has evolved an information-age model of governance that seeks to realize processes and structures for harnessing the potentialities of information and communication technologies (ICTs) (Saxena, 2005).

For the purpose of this paper e-governance will be defined as public sector's use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective

The purpose of this paper is to provide a   critical analysis on how South African government is engaged in e-governance in order to improve operations and service delivery in the public sector. This will be dome by evaluating and analyzing different websites of South African government departments.

2. South Africa and the digital divide

Just like many other countries, South Africa is also affected by the digital divide. In 1994 the new South Africa was born and great optimism and hope characterized the nation. This section will provide current state of the digital divide in South Africa. In order to achieve that it will address the following: current overview of South Africa, Internet usage, factors contributing to the digital divide, and attempts to bridge the digital divide in South Africa. Many people anticipated the new policies and firm measures of redness would contribute to the creation of a more equitable and fair society that would enable South Africa to become a player in the global economy (Czerniewicz, 2004). What makes South Africa interesting in terms of the digital divide is the country's multi ethnic and multi-lingual profile. The cultural background of the people reflects the different mother tongues and language use of students (Guðmundsdóttir, 2005).

South Africa is the fourth largest country in the Commonwealth and has the sixth largest population. With fifty per cent of its population in urban areas and has a highest rate of urbanization than most Sub-Saharan countries (Akinsola; Herselman & Jacobs, 2005).

According to Trusler (2003) South Africa has to deal with a number of challenges before they can begin with any initiatives for bridging the digital divide. They challenges issues are as follows Trusler (2003):

- A high level of inequality;
- A weak ICT infrastructure, particularly in rural areas;
- A lack of ICT readiness in government
- More pressing demands in the public service that makes ICT development a lower priority in budget terms.

ICT indicators are used to measure how widely diffused and accessible (real access, profiled by proximity, language and cost) are ICTs across all regions and sectors of society. It further measures how ICT's are being used by individuals, households, communities, government, the business sector and civil society to improve their livelihoods or operations (Lewis, 2007; SADoC, 2006). See Table 1.

Table 1: South Africa-ICT indicators

Indicators	Number
Population	47, 390, 900
GDP	USD 200.5 billion
GDP per capita	USD 4,230
GINI co-efficient	57.8
Main (fixed) telephone lines	4,729,000
Teledensity or Telephone subscribers (fixed)	9.9%
No. of fixed line operators	2
Mobile telephone subscribers	39,066,000
Teledensity (mobile)	68.2%
No. of mobile operators	3
Internet subscribers (estimated)	5,100,000
Broadband internet subscribers	283,839
No. of personal computers	5,300,000
No. of internet service providers	355
No. of television sets	10,000,000
No of televisions stations	6
No. of radio stations	130

Sources: CIA (2007); ITU (2007); Lewis (2007); Telkom (2007); UNDP (2007); GCIS (2007); SADoC (2006); StatsSA (2007).

South African's telephone industry has been historically separated into fixed line and mobile cellular. The mobile telephone market in South Africa is substantially larger than fixed line services. See Table 2.1. Fixed line service providers are Telkom and Neo Tel, the later is entering market after been receiving its license in December 2005 (iAfrica, 2007; Lewis, 2007; ITU, 2007). Vodacom, MTN and Cell C are currently the only mobile communications service providers in South Africa (GCIS, 2007; Lewis, 2007).

The UN Development Programme (INDP) currently ranks South Africa a lowly 121st out of 177 countries, with a GINI co-efficient of 57.8, on its Human Development Index (UNDP, 2006). This represents a decline from 94th out of 162 countries in 2001, suggesting the considerable challenges facing in improving the quality of life of its citizens (Lewis, 2007).

Prior to 1990, ICT services in South Africa were the sole responsibility of the state. Beginning with broadcasting, which is commissioned to the South African Broadcasting Corporation (SABC). South Africa has probably the slowest

fixed telecommunications, where the partially-privatised incumbent, Telkom have a monopoly. Mobile telecommunications has seen rather more progress two mobile operators licensed in 1993 and a third in 2001 (Lewis, 2007).

3. The advantages of E-governance

There are many reasons and benefits of e-governance (Chisenga, 2004). The greatest advantage of e-governance and its chief benefit to the society lies in its efficiency. Table 2 provides the advantages for e-governance.

Table 2: Advantages of e-governance

Advantage	Brief explanation	Source (s)
Cost effectiveness	Reduce cost in rendering services	Chisenga, 2004 Pardo, 2000; Heeks, 2001; Kumar & Best, 2006; Kroukamp, 2005;Norris, 2001; Singh & Sahu, 2008
Time saving	Reducing delays in delivery of services	Pardo, 2000; Heeks,2001; Kumar & Best, 2006; Norris, 2001
Improve communication	communication between governments and citizens	Mokhele & De Beer
Improve operations and services	Improving quality of service delivery	Kumar & Best, 2006; Singh & Sahu, 2008
expand access	Citizens access to Public Sector Information	Chisenga,2004 Pardo, 2000; Heeks, 2001; Kumar & Best, 2006; Kroukamp, 2005; Norris, 2001
Reinforce innovation		
Increase transparency and Public accountability	Offers strong bonds between public and servants based on transparency and accountability	Pardo, 2000; Heeks, 2001; Kumar & Best, 2006;Kroukamp, 2005; Norris, 2001; Seifert & Bonham, 2003; Schware, 2000; Singh & Sahu, 2008
Increase efficiency	e-governance that produce more output at the same total cost in less time	Kumar & Best, 2006; Kroukamp,2005; Tlagadi, 2007
Increase effectiveness	Governance that works better: producing the same outputs at the same total cost in the same time, but to a higher quality standard.	Kumar & Best, 2006; Tlagadi (2007)

E-governance, if implemented properly it can bring all the benefits as indicated in Table 2.

4. Challenges of e-governance

Introducing e-governance can pose huge challenges to many governments. Difficulties can arise in the development, implementation and updating of e-government sites (Kroukamp, 2005; Tlagadi, 2007). According to Van Themaat (2004) the issue of e-government in South Africa is part of the country historical and social context and e-government initiatives in the country therefore have to deal with number of challenges

More serious challenges that can emanate from e-governance are indicated as follows:

4.1. Privacy:

Many e-government systems collect, store and use the personal details of those who use their services or visits websites. That can pose a threat to individual privacy (Kroukamp, 2005)

4.2. Security

Governments will need to protect their information and systems from breaches of computer security that threaten not only the integrity and availability of services but also the confidence of users and the general public in the system (Kroukamp,2005).

4.3. Economic disparities

According to the Organisation for Economic Co-operation and Development (OECD, 2003) the economically disadvantaged have the lowest level of access to e-governance (Kroukamp, 2005; Van Themaat, 2004).

4.4. Education

Educated people are more likely to be the most user of the Internet. As the standard of education rises, so does use of the Internet (Kroukamp, 2005).

4.5. Accessibility

Ensuring accessibility to all members of the society is essential. This must include individuals with disabilities to be able to use e-government websites (Kroukamp, 2005).

4.6. Citizen awareness and confidence

Creating awareness of the advantages of e-governance and persuading people to become users of the system are bigger challenges (Kroukamp, 2005).

4.7. Lack of leadership and management

Political leadership which lacks the necessary drive to bring about change in the public sector may be the biggest obstacle to development. Leaders who do not see e-government as priority pay little attention to ensuring that IT policies and programmes are introduced (Kroukamp, 2005).

4.8. Bureaucratic government organization

In many cases the flow of information between governments departments and agencies is developed and operated to meet the needs of government departments and agencies and not citizens (Kroukamp, 2005).

4.9. IT impact

People without access to ICT, would not be able to participate in the e-governance hence causing the domestic divide.

4.10. Legal framework

E-governance requires Legal Framework that supports and recognizes digital communication (Tlagadi, 2007).

5.   E-governance in South Africa: current situation

Since 1994 the South African government has launched a number of e-governance initiatives, some involving very advanced technology in order to introduce e-governance (Kroukamp, 2005). South Africa has nine (9) provinces and each has its own Provincial legislature and Provincial Administration. Each Provincial government has various departments responsible for various aspects of service delivery including health, social development and welfare services, education, agriculture and conservation, safety and security, transport, local government planning and housing. Provincial departments are key agencies of service delivery (Mokhele & Deer,). Kroukamp (2005) argues that although South Africa is ranked 65th in the world and first on the African continent as far as e-governance capacity concerned, such statistics do not reflect the fact that infrastructurally disadvantages areas, especially rural areas, have limited access to electricity and telephone lines.

Like other governments around the world, South African Government is already in the process to improve service delivery and redressing of the past (Mokhele & De Beer). All most all government departments and agencies in South Africa have their own website. They provide services ranging from e-filing to facilitated the electronic

submission of tax returns ; the National Automated Archival Information Retrieval System (NAAIRS), providing extensive information and documentation about the national archive services to the public and to governments bodies and the Department of Home Affairs National Identification System (HANIS) project, which has initiated an automated identification of database of fingerprints to combat crime and supply information for the purposes of policing (Kroukamp, 2005).

South African e-governance initiatives are set out in a project dubbed Information Communication Year 2005. Some of the basic steps taken, including the installation of public information terminals for Internet and email access in certain rural centres as part of the joint public/private sector initiatives and the funding of computer centres in rural communities by companies such as Microsoft (Va der Waldt, 2003 as cited in Kroukamp, 2005; Department of Communication (DoC, 2003).

The State Information and Technology Agency (SITA) has been formed to streamline existing technologies and to implement new systems in all government departments. SITA is a company providing Information Technology (IT), Information Systems (IS) and related services to the South African government (Kroukamp, 2005).

According to Tlagadi (2007) the followings are the goals of e-governance as endorsed by the Department of Public Service:

- Improve the internal organisational processes of governments

- Provide better information and service delivery

- Increase government transparency in order to reduce corruption

- Reinforce political credibility and accountability

- Promote democratic practices through public participation and consultation

South Africa has also taken taking steps to embrace and establish an e-government framework. The good example is the Department of Home Affairs.The department, having already rolled out mobile units that make use of satellites to enable citizens in rural parts to apply for ID books, is now investigating a national fingerprint database. Cabinet approved the idea of a national identification system that makes use of fingerprints stored in a database .This project aims at reducing fraud and corruption.

The concept of e-government had moved away from whether it is important and whether it is needed to the point where policy makers are determining how best to make it happen. The concept behind e-government is that it enables participatory democracy and allows citizens to engage and debate with the government on issues of concern. In South Africa, as a result of the challenging digital divide, enabling this access electronically is challenging.

Historically, the use of information technology and communication has remained the prerogative for the more well-to-do, and has only served to increase their interests. Yet the South African government is determined - in the face of criticism   to   roll   out   e-government   to   its   people.

One way it endeavours to do this is through multipurpose community centres that are dotted around the country and that allow citizens to access the Internet, email and other business tools. Some have evolved to become business centres   in   their   own   right,   enabling   rural   communities   to   have   access   to   an   'office'.

Heightening citizens' contact with government could have the effect of reducing corruption in a country and increasing service delivery. Despite its vast potential as an enabler, very few African countries engage in e-governance. Locally, infrastructure has been established and will continue to be developed and this will enable government to launch similar portals in the SADC region as it is vital to ensure that the region does not fall further behind.

Gauteng launched the Gauteng Provincial Government Internet portal on 8 June 2005 in Tembisa. The Gauteng Online portal (http://www.gautengonline.gov.za) gives members of the public access to certain e-government services and information about government at the push of a button. Gauteng Online offers information and various services for citizens, business, employees and other government entities. It also provides a single entry point to provincial government websites. The launch marked the first phase of services to be offered on the site. Members of the public are be able to access the portal through any facility with internet access, including certain multi-purpose community centres and telecentres. Through the Gauteng Online initiative, internet access has been rolled out to public schools across the province.

The portal contribute to the provincial government's objective to build an effective and caring government, improving efficiency and access to government information and services

6. Research methods

The combination of quantitative and qualitative research techniques for this study. Literature survey was conducted as a basis for the study. The research reported involve a quantitative study of the characteristics South African government departments websites. These websites were analysed. Websites contents analysis is the core dimension because it offers an overview of the government proximity to the citizens, in the sense that it provides insights about types of information that governments make available on their websites and their level of interaction with citizens (Criado & Ramilo, 2003).

The first phase of the study was to examine the content and maturity level of different aspects of the government departments' websites. About 31 government websites were identified and visited. The following sources were used to identify government websites to be included in the analysis:

- South Africa Government Online: www.gov.za.

- South African Government Information: http://www.info.gov.za/aboutgovt/dept.htm

The main reason for government to develop websites is to provide digital or electronic information services to the citizens. The content of the information on the websites becomes a critical issue that need to be analysed. Hence this paper provide a critical analysis of these contents. The availability of the following information was used as the bases to analysis of the websites:

- Fulltext government documents (e.g. Acts, Bills. Annual reports, policy documents, research reports)

- Government forms (forms include various forms ranging from employment forms (Z83), application for identity card, passport, bursary, registrations forms for suppliers etc,)

- Online application facilities (online application facilities could help a number of individuals who are unable to travel to governments offices due to various reasons.

- Government contact details (people usually need to contact government departments. It is imperative to have these contact details available)

- Government news (this include media releases, speeches by prominent government officials)

- Vacancies

- Call for tenders

- Department calendar of upcoming events

- Frequently Asked Questions (FAQ): The web makes it easy to provide access to a list of frequently asked questions that could be updated

- Links (to other related or useful sites)

- Site map (it serves as an index to the page, provide taxonomy or group contents under appropriate heading. Data obtained from 31 government websites was coded and processed.

- Feedback facilities: citizens should be provided with the mechanism for providing comments on various issues.

- Search facility (which can enable the user to search though the page using keywords or phrase)

6. Findings and discussions

Descriptive statistics were generated and used in the analysis and description of the research variables. Findings are present as follows:

Government Documents

Full-text government documents were available on 31 (100%) of all the websites reviewed. These government departments provide access to Legislations/Acts, Bills, white papers, annual reports, parliamentary documents, research reports, annual reports, policy documents etc. On all websites documents are available mainly in Portable Document Format (PDF), in some cases as word documents.

Government forms

Out of the 31 government department's websites, only 13 provided access to government forms. These departments are: Trade and Industry, The Presidency, South African Revenue Service, Public Works, Minerals and Energy, Labour, Justice and Constitutional Development, Housing, Home Affairs, Education, Environment and Tourism, Agriculture and Arts & Culture. These forms are stored in digital format with easy access on the websites.

Examples of this forms which are available on the websites include:

- Application for employment forms (Z83)

- Registration forms for supplier

- Application for identity document

- Application for passports, marriage certificate

Online application facilities

Online facilities enable citizens to apply or submit information to the government without travelling to their offices. Out of 31 government websites, only 4 have online facilities. These departments are SARS, The Presidency, Labour and Home Affairs. Examples of such services is the online submission of Tax returns for Pay As You Earn (PAYE) and Skills development Levies, Value Added Tax (VAT), Provisional Tax Return to SARS. Other include the registration as supplier to the Presidency, Online registration of domestic worker (Unemployment Insurance Fund),

view Compensation Fund claim status, supplying of Employment Equity report to the Department of Labour. Verify marital status, viewing application status of Passport or Identity document to Home Affairs.

Government Contact Details

Access to government offices and officials via letters, fax, electronic mail is very essential (Chisenga,2004). However this details need to be regularly updated. As they change sometimes. All 31 government departments reviewed provided their contact details on their websites. The details were most placed under the heading "contact us". Details that we provided includes:

- Mail address (Postal box)

- Street address

- Telephone numbers

- Fax numbers

- E-mail address

These departments have advantage of utilizing the websites to provide their contact details.

Government news

All 31 government departments' websites provided the current news on their websites. These are either put under the heading "media releases" or news. Most of the news are current. Most departments focused on the news that covers their government officials or counterparts. These officials generate a lot of media attention. For citizens living outside the country, with no access to South African radio, television and newspaper, this is a good platform for them to catch up on their country news. Meanwhile some provide current news of government matters. This was very impressive as the news provided were professional articles.

Vacancies advertisement

This refers to employment advertisement for a particular department. This advertisement is also send to different newspapers. Out of 31 government departments, 23 has the list of vacancies on their websites. They are available as PDF documents. Those departments which do not have such service are: Trade and Industry, Education, Public Service and Administration, Land Affairs, Health, Foreign Affairs, Correctional Service and Home Affairs.

Tenders advertisement

Under this heading, government departments announce call for tender to the department. Outside organization are called to bid for this tenders. The tender committee or procurement will review all the applications and then make the decision on the successful bidder.

Out of 31 government departments, only 12 provided information on tenders on their website. Its is very strange that other departments did not provide this information on the website for easy access by the rest of the citizens. This is a very sensitive activity, since lot of corruption occurs in awarding of these tenders. It order to fulfill one the advantage of e-governance, which is "transparency" this information should be accessible to everyone and everywhere.

Governments departments which provided this information are:

- The Presidency

- Communications

- Provincial and local government

- Public Enterprise

- Science and Technology

- Safety and Security

- Sports and recreation

- Public Works

- Minerals and Energy

- Environment and Tourism

- Arts and Culture

- Housing

Departmental calendars on activities or events

Government departments put lot of their activities and events on the websites to ensure full participation of the citizens. Though some departments do not provide such information on the website, some do provide.

Out of 31 government departments, 15 (50.5%) provided calendars of activities and events on their website.

Frequently Asked Questions

It is essential to record questions that most of people will ask or which people usually ask. For example information such as working hours of the department, procedures in applying for employment, where to obtain what information. Creating a database of questions and possible answers can be of great benefit to the people.

Only 8 government departments provide access to FQA facilities on their website. These departments are:

- Safety and Security

- Science and Technology

- Government Communication and Information Systems

- South African Revenue Service

- Education

- Home Affairs

- Defence

- National Treasury

Links

It is normally for any website to create links to other related or recommend websites, which one can visit to access more or other information. Out of 31 government websites visited, 30 websites provide access to other links. Only the Department of Defence does not provide access to other links.

The links provided at these websites range from, other government departments websites, agencies, non-government organizations, corporate organizations etc.

Site map

Site map is a page which contains an organized listing of links to all pages within the website. Having a well structured sitemap will help the user to navigate through the website. A sitemap lists links to all the different pages in a website, although the general rule of thumb is to keep the number of links on.

Only 9 government websites provided access to site map. These government departments are:

- Defence

- Arts and Culture
- Foreign Affairs
- Land Affairs
- Trade and Industry
- Labour
- Science and Technology
- Government Communications and Information Systems
- Home Affairs

Feedback facilities

Feedback facility enables the user to send comment or opinion to the system. Out of 31 government departments, only 8 provide access to feedback forms. These forms could also be sued to request for information not available on the website. These departments are:

- Government Communication and Information Systems
- Land Affairs
- Arts and Culture
- Health
- Correctional Service
- Social Development
- Environment and Tourism

Search facilities

What good is the websites if users cannot be able to search through it? This search facility enables the user to search for information on the website using keywords or phrases. About 28 government websites provide search facility. Only 3 do not provide such access. They are:

- Foreign Affairs
- Education
- Correctional Service

7. Conclusions and recommendations

South Africa government departments use the following domain.gov.za. This domain is reserved for government websites. It was observed that all government departments' websites are published under these approved domains. Most of the design of the websites were similar, with other looked slightly different. Most of these departments' websites have been updated. With only one department still has the picture of deputy minister who had resigned. This need to be need to be updated. These websites were well presented. Accessing them was not a problem at all.

In order for thr government to play a role in bridging the digital divide, they need to take advantage of providing access to various digital information resources and services.

This paper discussed the digital divide in South Africa. ICT indicators were presented as to monitor the progress on South Africa in terms of addressing the digital divide. The advantages of e-governance as well as the its challenges were presented. The current situation of e-governance in South Africa were also discussed. The paper introduced it research methods as well as its findings.

Recommendations

Based on the findings of the research the paper provides the following findings:

- Government need to provide more training to the ordinary citizens on how to use these UCTs facilities to access e-governance service.

- For improvement in service, competent staff should also be appointed to develop and maintain e-governance service.

- Government must engage with the industry in order to improve telecoms infrastructure.

- Government to assist its citizens with access to affordable internet services so that these people should be able to use more of e-governance services.

- Government should allocate more funding on e-governance projects. These projects will require a lot of funds.

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