

# Handbook of Research on E–Services in the Public Sector: E–Government Strategies and Advancements

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## Chapter 7

# An Overview of Internet Developments and their Impact on E-Government in South Africa

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### **ABSTRACT**

*The usage of the internet has grown over recent years in South Africa but at a very slow rate. This is the result of several challenges facing the growth of the Internet in South Africa. These challenges are mostly related to the lack of infrastructure for the Internet, high cost of computer technology and service provider challenges. The paper provides an overview of the Internet usage and its impact on E-Government in South Africa. It examines regulatory issues pertaining to the Internet. It also examines Internet growth in the business and government sectors. In the government sector, the Cape Online Strategy, is an initiative by the provincial government of the Western Cape in SA, is an example of a global trend towards greater levels of interactivity between government and citizens. This initiative is an excellent example of how Web-based solutions can be used to deliver certain services to citizens. Another excellent example is an E-justice initiative undertaken by the Department of Justice. The initiative aims at promoting a more efficient system of Justice in SA. The paper also provides an overview of the challenges to Internet adoption in South Africa.*

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## INTRODUCTION

Many countries worldwide are constantly creating exciting ways in which to use the Internet. South Africa (SA) is no exception. The SA government has launched an e-government policy which is aimed at creating a government that works better, costs less and is results-driven. It is clear that the reinvention of the SA government is tied to the proliferation of the Internet. The Internet is perceived as an instrument to enhance service delivery performance in the South African public service. The internet is also perceived as an essential tool to ‘catch-up’ to the information age of the developed world and to close the digital gap in SA.

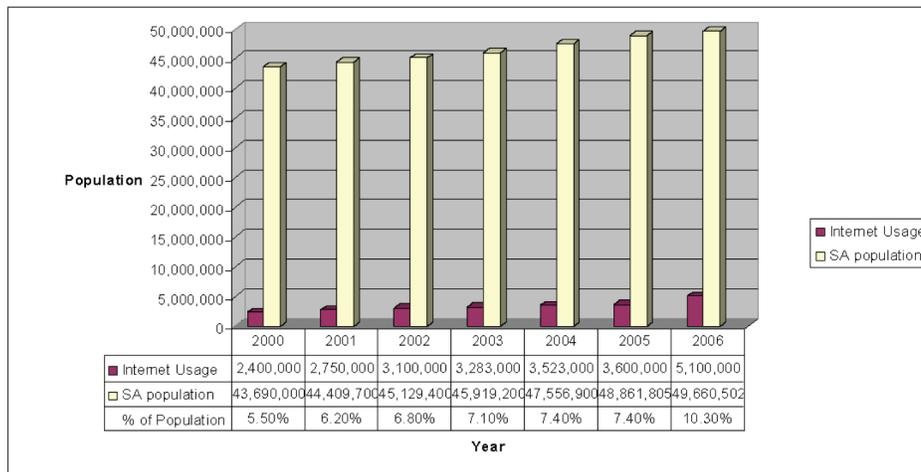
The purpose of this paper is to provide an overview of internet usage in South Africa. It also considers development arising from the internet usage in SA. This paper does not attempt to provide a synoptic overview of all internet initiatives in SA. Instead it mainly provides a snapshot of recent key internet initiatives in SA. Against this background, a qualitative analysis is used.

## Internet Usage in South Africa

From a communication perspective, South Africa has 4.729 million landline telephones in use and there are 33.96 million mobile cellular phones. The South African telephone system can be described as the best-developed and most modern network in Africa. The South African telecommunication network consists of carrier-equipped open-wire lines, coaxial cables, microwave radio relay links, fibre-optic cable, radiotelephone communication stations, and wireless local loops (Central Intelligence Agency, 2007).

The Internet user base in South Africa is growing year by year – but at a very slow rate. Figure 1 shows the Internet usage and population statistics for South Africa. From the year 2000 to the year 2006 we see, proportionately, that the usage of the Internet by the population of South Africa is very low. From this slow growth in the Internet user base we can conclude that there are several challenges facing the growth of the Internet in South Africa. Some of these challenges are related to infrastructure for the Internet, cost of computer technology, and service provider challenges.

Figure 1. Internet usage in South Africa (internetworldstats.com, 2007)



## ***An Overview of Internet Developments and their Impact on E-Government in South Africa***

Goldstuck (2002) has, over the years, reported on Internet Access in South Africa. He has predicted a very slow-paced growth rate in the usage of the Internet in South Africa. Below is a brief summary of the Goldstuck Report on Internet Access in South Africa for 2002, 2004, 2005 and 2007:

In 2002 the state of Internet access was:

- One out of every 15 South Africans had access to the Internet at the end of 2001. This compares with at least one in two people in countries such as the USA, Canada, South Korea, Singapore and Hong Kong.
- The total number of South Africans with access to the Internet at the end of 2001 was 2.89 million.
- This number was expected to grow by less than 10% to 3.1 million by the end of 2002.
- There is a strong demand by corporate South Africa for broadband Internet access.
- Only a small handful of ISPs are profitable. An increasing number of ISPs are profitable on an EBITDA basis (Earnings Before Interest, Tax, Depreciation and Amortisation). In short, it is no longer uncommon for ISPs to be operating profitably, but they still have a legacy of debt.
- The number of ISPs has grown dramatically, largely due to the rollout of a Virtual ISP service by Internet Solution.
- Business strategies in the ISP industry are maturing to the extent that it has become possible to create a model that explains not only how ISPs evolve, but also how they meet their clients' needs as those needs evolve.
- A tiny proportion of ISPs in South Africa have gone out of business through bankruptcy.
- Mobile access to the Internet has been minimal, with only a tiny proportion of those people who have appropriate devices ac-

tually using the devices to connect to the Internet.

- The arrival of GPRS, the so-called 2.5 generation of mobile network technology, may alter the mobile access picture during 2003, but only if appropriate handsets become available.
- Community centres, resource centres and digital villages in townships will continue to underachieve in their goals of bringing Internet access to a sizeable proportion of residents in disadvantaged areas.

In 2004 the state of Internet access was:

- One in every 13 South Africans will have access to the Internet.
- There was a 6% growth, with 3.28 million South Africans expected to have Internet access by 2003.
- The market remains healthy because companies are reinvesting, improving reliability of the networks, and building backup systems.
- ISPs are now focusing on existing customers.
- Factors expected to boost Internet growth in 2004 were: a proposed Second Network Operator (SNO), the launch of high-speed or broadband wireless access by Sentech the para-statal telecoms infrastructure provider, and the favourable rand-dollar exchange rate which makes the cost of technology cheaper.
- School connectivity was seen as a priority.

In 2005 the state of Internet access was:

- One in every 12 South Africans expected to have access to the Internet.
- 3.6 million South Africans were expected to have access to the Internet.
- There has been significant growth in corporate usage of the Internet.

- Growth of Internet access had slowed down, with the dial-up market experiencing no growth in subscribers.
- A competitive Second Network Operator failed to materialise, which impacted on the growth of the Internet.
- ISPs were evolving to provide specialist services.
- School connectivity was experiencing delays of up to three years.
- Improved affordability of personal computers, both as a result of cheaper products and new financing options.
- Convergence of voice and data.
- Technology improvements.
- Demand for more server/storage capability to meet higher levels of corporate governance requirements.

In 2007 the state of Internet access was:

- One in every 12 South Africans expected to have access to the Internet.
- The study showed that there will be more than 800 000 broadband subscriber accounts active in South Africa.
- The dial-up user base has fallen dramatically, dropping by 122 000 users, and falling below the one million mark for the first time since 2001.

One of the reasons that the growth of the Internet in South Africa has been very slow, is due to the lack of competition in the telecommunications industry – this is discussed more later. To summarise, in 2002 one out of every 15 South Africans had access to the Internet, in 2007 there was only a marginal change to one in every 12 South Africans. The growth rate of the adoption of the Internet has been very slow. The access to appropriate technology and infrastructure has impeded the growth of the Internet in South Africa.

SA is undergoing transformation in the face of global pressures exerted by Internet technologies (McNiven & Marche, 2003). Goldstuck (2006) suggested that the following factors will drive the future growth of the Internet in South Africa:

- Continued strong economic growth.
- The emergence of the African middle class.
- Improved education levels, including computer literacy.

But although the predictions have been ambitious, the reality has been somewhat less successful. This raises the question – ‘when other nations have been so successful, what has impeded South Africa?’ The following analyses the regulatory and legislative developments in this arena which in part explain the country’s slow communications growth rate.

## **REGULATORY ISSUES**

South Africa has been quite active in the e-revolution. The South African government has developed the following policy documents and regulations, the South African Green Paper (Central Government, 2000) and the Electronic Commerce and Transaction Bill (“Electronic Communication and Transaction Bill,” 2002).

### **The South African Green Paper**

The South African Green Paper on electronic commerce (Central Government, 2000) is divided into four categories. Each category contains key issues or areas of concern that need serious consideration in electronic commerce policy formulation:

- The need for confidence in the security and privacy of transactions performed electronically.
- The need to enhance the information infrastructure for electronic commerce.
- The need to establish rules that will govern electronic commerce.

- The need to extend the opportunities of electronic commerce to the entire population.

### Electronic Communications and Transactions Bill

The Electronic Communications and Transactions Law, effective from 31 July 2002, governs all companies that conduct electronic commerce in South Africa. The law was designed to facilitate electronic commerce, but may instead increase the regulatory burden and introduce an unacceptable level of uncertainty for some businesses. The law requires:

- Accreditation for certain electronic signatures.
- Takes government control of the “.za” domain name.
- A long list of disclosures for websites that sell via the Internet.

The Electronic Communication and Transaction Bill (“Electronic Communication and Transaction Bill,” 2002) has the following regulatory objects for electronic communications and transactions:

- To provide for the development of a national e-strategy for the Republic.
- To promote universal access to electronic communications and transactions and the use of electronic transactions by Small, Medium and Micro Enterprises (SMMEs).
- To provide for human resource development in electronic transactions.
- To prevent abuse of information systems.
- To encourage the use of e-government services.

Some of the objects of the Act are to enable and facilitate electronic communications and transactions in the public interest, and for that purpose to:

- Recognise the importance of the information economy for the economic and social prosperity of the Republic.
- Promote universal access primarily in under-served areas.
- Promote the understanding and acceptance of and growth in the number of electronic transactions in the Republic.
- Remove and prevent barriers to electronic communications and transactions in the Republic.
- Promote legal certainty and confidence in respect of electronic communications and transactions.
- Promote technology neutrality in the application of legislation to electronic communications and transactions.
- Promote e-government services and electronic communications and transactions with public and private bodies, institutions and citizens.
- Ensure that electronic transactions in the Republic conform to the highest international standards.
- Encourage investment and innovation in respect of electronic transactions in the Republic.
- Develop a safe, secure and effective environment for the consumer, business and the Government to conduct and use electronic transactions.
- Promote the development of electronic transactions services which are responsive to the needs of users and consumers.
- Ensure that, in relation to the provision of electronic transactions services, the special needs of particular communities and areas, and the disabled, are duly taken into account.
- Ensure compliance with accepted international technical standards in the provision and development of electronic communications and transactions.

- Promote the stability of electronic transactions in the Republic.
- Promote the development of human resources in the electronic transactions environment.
- Promote SMMEs within the electronic transactions environment.
- Ensure efficient use and management of the.za domain name space.
- Ensure that the national interest of the Republic is not compromised through the use of electronic communications.

Though these objectives are utopian, they are the first steps in developing a manageable framework for the sustainable development of the electronic community in South Africa. It is only by actions like this that South Africans can become active role players involved in the development of a strategy for the electronic community in South Africa (Singh, 2002).

The South African Law Reform Commission submitted draft legislation and discussion documents on privacy and data protection for public comment in 2006. The South African Law Reform Commission held a series of workshops on the legislation in February 2006. Numerous public submissions were received, and the Commission made recommendations on the draft legislation. For example, restrictive legislation may negatively impact the ability of South African and foreign companies to receive and send trans-border flows of personally identifiable data (Office of the United States Trade Representative, 2007)

## **Telecommunications**

Until recently (2008) South Africa's main telecommunication provider, Telkom, has maintained a monopoly on telecommunications provision and services, of controlling the underlying network into which other companies wished to inter-connect. Many businesses have complained about high telecommunications prices – even resulting in the

emergence of an anti-Telkom website for consumer to vent their frustrations. In 2004 Telkom was cited by the South African Competition Commission for anti-competitive conduct with respect to Value Added Network Services (VANS). A complaint was filed by the South African Internet Service Provider Association alleging further abusive practices by Telkom. In addition to such practices, one U.S. company has pursued extensive legal remedies against Telkom to honour the results of binding arbitration regarding a multimillion dollar contract. Instead of honouring the arbitrator's findings, Telkom took steps to block the arbitral award and appealed the award to a local trial court. In 2005 the Department of Communications sponsored two colloquiums to discuss measures to lower telecommunications prices. At the conclusion of the second colloquium the Department of Communications promised to release an action plan in early 2006. In November 2006 the South African Supreme Court of Appeal found in favour of the U.S. company.

In 2003 the Department of Communications released a draft Convergence Bill with the aim of simplifying the existing legislative framework, empowering the regulator and opening the telecommunications industry to greater competition. Comments received during a public comment period were highly critical of the draft bill and, as a result, the Department of Communications revised the bill. In 2005 the Department of Communications released for comment its modified version, the Electronic Telecommunications Bill. In December 2005 the bill was sent to the South African president for signature. He refused to sign it, citing that the bill gave too much control to the Department of Communications at the expense of ICASA. The president requested a constitutional review of the bill and its companion legislation, the ICASA Amendment.

The Electronic Telecommunications Bill (plus amendment) was passed in June 2006 in a compromise that allows ICASA to maintain some independence. The Department of Com-

munications, however, maintains a strong grip on ICASA, as it approves ICASA funding (Office of the United States Trade Representative, 2007). Although partly privatised, the government retained a 'golden share' in Telkom and thus had a vested interest *not* to liberalise the telecoms market too fast. Government was anxious to protect the high number of state employees and boost treasury funds through lucrative telecoms revenues.

Some of the problems facing value added network services and Internet service providers may be addressed by new telecommunications policies and regulations. On 1 February 2005 the Minister of Communications announced sweeping liberalisation in the telecommunications sector, but later back-tracked on key aspects. Under the proposed liberalisation, mobile operators were to be allowed to use any fixed lines in the provision of their service, value added network services could be offered through infrastructure other than that which is owned by Telkom, and value added network services providers could employ Voice-Over-Internet Protocols (VOIP). In addition, private telecommunications network operators would be allowed to sell spare capacity. Little of this actually came to fruition however. As Horwitz and Currie note (2007) "The nearly congenial distrust the ANC-led Government displayed toward independent agencies weakened regulation and hence intensified the incumbent's power. An additional factor in an incumbent's power arises where the Ministry responsible for safeguarding the government's residual financial interest in the incumbent is also the Ministry making policy for the sector. The South African experience shows that the incumbent will tend to have the Ministry's ear, and—perhaps because—the Ministry is keenly attentive to the company's share price in the event of future public offerings." (See further Horwitz & Currie, 2007).

Thus South Africa committed to license a second national operator (SNO) to compete in long distance, data, telex, fax and privately leased circuit services, by 1 January 2004. The Minis-

ter of Communications conditionally approved a license for the SNO in September 2004, but disagreements among SNO stakeholders – in which the South African Government was itself a major player in the liberalisation process – over operational control and allocation of equity stakes, delayed the launch until 2006. The result is that Telkom has continued to enjoy monopoly privileges. The SNO was finally licensed by ICASA (Independent Communications Authority of South Africa) in December 2005. It began operations on 30 August 2006 under the name 'Neotel'. Neotel has also entered the business-to-business market and planned to enter the residential market in April 2007.

## **E-GOVERNMENT INITIATIVES**

A number of initiatives have also been undertaken by the South African government such as the government's Batho Pele National Gateway Project, the South African Revenue Service's (SARS) e-filing initiative, the Department of Transport's e-Natis initiative, the Department of Justice, e-Justice initiative and the Cape Provincial Gateway project (Naidoo, 2008). The initiatives undertaken by almost all the departments point to steady progress, with the exception for the Department of Transport (eNatis, 2007). However, the focus of the South African government is predominantly on efficiency improvement through information dissemination, rather than adopting a more comprehensive view, such as incorporating issues such as e-democracy and citizen engagement. Initiatives undertaken by the Department of Justice, e-government initiatives for the World cup 2010, and e-filing initiatives by the South African Revenue Services are discussed to provide a snapshot of e-government initiatives in SA.

## **Department of Justice**

The need to transform the criminal justice system (CJS) in SA necessitated that the justice system of a country be re-evaluated (e-Gov News Jan/Feb 2008:1). This was as a result of the CJS facing extreme criticism, for its failure to keep South Africans safe and to bring perpetrators to justice. Within the department a number of challenges were prevalent such as high rate of absenteeism, lack of motivation, lack of commitment to the organization, poor quality of services, antiquated manual information systems, deterioration of internal relations and incompetent management.

The Department of Justice therefore embarked on a process of transformation and restructuring (Naidoo, 2008). An e-Justice programme was launched in 2000, to re-engineer the court process by utilising appropriate technology, including e-Commerce and Knowledge Management. The programme aimed to improve the effectiveness and efficiency of the justice system. It also aims at playing a meaningful role in combating crime and upholding the Constitution. The e-Justice system seeks to transform the justice administration system from a manual to an automated system. The programme therefore supports the fundamental reforms necessary to establish a more fair, accessible and efficient system of Justice in SA. The purpose of the programme is to reform and modernize the administration and delivery of Justice through re-engineering work processes, use of enabling technologies, strengthening strategic planning and management capacity, organizational development and human resource interventions. E-Justice is one of the ways in which the Department of Justice hopes to alleviate some of the case backlogs and missing case dockets in the department (e-Gov News Oct/Nov 2006:2). Currently, the courts in SA have huge backlogs and prisons in general are overcrowded with a large number of trial-awaiting prisoners.

The eJustice programme comprises of three specialized projects namely (Jiyane 2005):

- Court Process Project (CPP) which incorporates the flow of processes that affect the Departments in the Integrated Justice System, that is the Departments of Safety and Security, of Correctional Services, of Social Development, of Justice and Constitutional Development as well the National Prosecuting Authority;
- the Digital Nervous System (DNS) which aims to deploy information technology infrastructure and related services such as office applications, email connectivity and training to the broader Department of Justice Community. In addition to basic technology provision and support, the DNS has expanded to include business solutions and support, business process management and information management services;
- the Financial Administration System (FAS) is tasked with automating and administering the trust accounts in the Magistrates' Courts, the State Attorneys' offices, and the Guardians Fund in the Masters' offices. Amongst the benefits of the project, will be the provision of timely and relevant information to all stakeholders, reduced time spent in queues by members of the public, reduced human error in calculations, reduced risk of files getting lost, as well as greater citizen convenience.

An example of a multi-million rand e-Justice project termed 'IJS Court centre project' on the court process was initiated in 2000, with a long term implementation framework (Matthews, 2002). It was implemented in different magistrates' courts throughout SA. An automated court case and case management system known as e-Scheduler, has also been implemented at a number of courts where case backlogs are particularly high. The aim of the project is to improve court and case management at the magistrates' court level. The project is not only just about technology, a significant

proportion of the programme focused on capacitating people to use the technology efficiently.

An investigation of this project however suggests that the software used by the Court Centre Project is not compatible with the larger eJustice software which has led to some controversy. At present, the system is being used at 471 courts which means, that 90% of courts have it, but 10% are still waiting for it (The Star, 29 August 2008).

A current analysis of the project suggests that a great amount of transparency has been achieved in terms of the length of time for cases to be prepared and adjudicated, and the average time that awaiting trial detainees are detained is reduced. It lists all new cases, stipulates any cases that have been postponed or closed, and carries a list of all children on an outstanding court roll. The project benefits the Department of Justice by reducing the number of people at the magistrate's courts at any given time as well as by reducing the security risk in the court environment. The SA Police Services benefits due to reduction of transport, reduction of prison wardens, and the Department of Correctional Services benefits due to the reduction of administration, transport costs and the number of internal security officials employed in prisons.

It is also evident that there are also benefits regarding inter-departmental coordination, between the Departments' of Justice, Correctional Services and South African Police Services. However, such benefits are only evident at the national sphere of government, with a lack of vertical integration (intergovernmental relations) between and amongst the three spheres (national, provincial and local) of government in SA. Furthermore, there are conflicting priorities between the different levels of government.

Another recent study by the Open Foundation of SA found that the eJustice system has major potential but also faces various challenges. Researchers found, the system is severely limited due to shortcomings centered largely on how data is entered into the systems. These include a confusing mixture of two prominent South Afri-

can languages (Afrikaans and English) entries; cases involving multiple accused and multiple offences being given a single case number making it difficult to track the progress of a charge for first appearance finalization; inconsistency in declaring cases open or closed where the accused has absconded; and inconsistent classification of offences and outcomes. The initiative also faces severe human capacity shortages to effectively drive the eJustice initiative. Although the system had the potential to revolutionise court case management, reduce trial delays and thwart docket theft and corruption cases, it is evident that what is needed is better commitment to, and integration of, each linked stage in the CJS, from policing through to prosecution and trial, to sentencing and correctional services.

## **E-Government and World Cup 2010**

Another significant e-Government initiative relates to the FIFA Confederations Cup and the FIFA World Cup, being hosted by South Africa in 2010. A huge volume of voice and data traffic will move over the FIFA event network. This requires a reliable partner to develop the fixed-line components of the necessary telecommunications infrastructure. This encompasses the provisioning of fixed-line telecommunications related products and services and, where applicable, the services of qualified personnel necessary for the planning, management, delivery, installation (and de-installation), operation, maintenance and satisfactory functioning of these products and services. In essence, the project will enable the interconnection of important event venues, including the ten FIFA World Cup stadiums, broadcast compounds, media centres, the International Broadcast Centre and FIFA headquarter locations. Likewise the general public - soccer fans – around the world will be able to book for tickets, follow and even see the World Cup wherever they live around the world: a truly global e-government initiative.

## **The South African Revenue Service E-Filing Initiatives**

One of the early achievements has been the enablement of the South African Revenue Services (SARS). SARS introduced its electronic filing (e-filing) initiative in 2001, in accordance with the government's broader eGovernment strategy in the public service (South African Revenue Service, 2007). E-filing of tax is a co-ordinated effort between SARS and private business (e-Gov News, Oct/Nov 2001:1). The main aim of an e-filing system is to facilitate the electronic submission of tax returns and payments by taxpayers and tax practitioners. Taxpayers may however still submit their returns in the traditional way. However, e-filing is aimed at improving operational efficiencies in order to deliver a better and quicker service. Those who wish to make use of the e-filing system are required to register at the particular service provider, conclude an agreement and receive a private access code and password to access the available services that are offered by SARS (e-Gov News, Oct/Nov 2002:1). E-filing now enables corporate entities to submit and pay certain tax returns online. For individuals, the electronic submission is still limited to provisional tax returns, while annual individual returns are not yet available for e-filing. It is also envisaged that, in the near future, customers will also be able to pay airport tax and customs duties online.

In August 2005, SARS launched e-filing kiosks at many of its branches and is currently working closely with the four major commercial banks on a payment channel project. SARS has also implemented a single view of the customer by deploying the 'Siebel Public Sector Single View of the Taxpayer' solution. Prior to deploying the new system, SARS faced considerable business integration challenges, with fragmented taxpayer information residing in disparate systems. The result was duplicated effort, taxpayer frustrations and inevitably lost revenue (The e-Business Handbook, 2005).

There are a number of internal and external factors that have contributed to the success of SARS (South African Revenue Services, 2007). Externally, it enjoys the strong political support from government, as well as working governance practices. In this regard, there is a zero tolerance approach to corruption within the department. The e-filing initiative has been effectively implemented. As a result there has been an increase in SARS revenue by over a R100 billion since the inception of its e-Government initiatives in 2000 and 2001 respectively. Furthermore, in 2007 SARS has simplified the tax return forms, thus making the whole process easier. It has also helped to keep up-to-date records on taxpayers, which are easily accessible. It has also helped SARS to understand the risk profiles of customers and industry segments. SARS currently receives between 65 000 and 75 000 electronic payments from taxpayers and traders every month. The electronic service is backed up by a number of useful services such as same-day processing of all transactions. This addresses the problem previously created by backlogs in the system. The electronic service is also used for extensions on Value Added Tax (VAT) from the 25<sup>th</sup> of the month to the last day of month.

SARS also has a step-by-step guide on its website to educate and guide customers on tax and its related issues. For example, customers are guided on how to correctly go about filing tax returns electronically and manually. The benefits of the e-Government initiative by SARS are enormous. E-filing has eliminated the need for tax payers to manually pay their taxes. All customers should do is register online, and payments can be made electronically. This is an ongoing service, available seven days a week, twenty-four hours per day, and 365 days a year. The new system has integrated the SARS 'silos', bringing with it comprehensive, real-time taxpayer information, lower operational costs, and better citizen service through improved response times in handling tax interactions. SARS estimates that the project paid

for itself in less than two months. Ultimately, the SARS revenue take has increased considerably in the last decade, benefitting the state treasury and ultimately its citizens – a testament to the benefits conferred by effective roll-out and implementation of E-Government initiatives

### **Challenges to Internet Adoption in South Africa**

Internet adoption will only be encouraged if the infrastructure supports the technology. A ‘digital divide’ may arise, for example, in the business world, where the larger, well-established companies effectively use the technology, forcing small and medium companies to adapt or die. Small firms are at times intimidated by the technology, are frequently concerned about the ability of outsiders to tap into the workings of a small firm via computers, and often lack the time or resources to develop an understanding of how information systems can help them. Wang (1999) reports that medium and small business concerns often do not fully understand the concept of information systems and how to effectively use internet resources.

Guomundsdottir (2005) suggests that there are several factors that challenge the growth of the Internet in South Africa. Before these challenges are tackled, however, he aptly suggests that fulfilling the basic needs of the greater population has to become a prerequisite to bridging the digital divide in South Africa. In Table 1 Guomundsdottir

(2005) models the South African digital divide as follows.

Other challenges include providing education and training on the usage of the electronic model, addressing the lack of preparedness by government institutions, poor infrastructure, and the lack of resources and unequal access to technology (Naidoo 2008). Also, Internet penetration at home is showing low levels of growth. Only one out of ten South Africans are using the Internet and a very small percentage of South African schools are equipped with computers (Naidoo 2008). While South Africa has a over 42.3m mobile customers, and a penetration of over 100%, (African Mobile Factbook, 2007), it has only recently (2008) surpassed the 1 Million broadband subscriber mark, made up mainly of ADSL and HSDPA subscribers.

The fixed line incumbent Telkom currently has in the region of 415,000 ADSL subscribers, while Mobile Operator Vodacom has 360,000 3G/HSDPA data card users and MTN recently announced that they now have 120,000 3G/HSDPA data card users on their South African network. Thus, there is still plenty of room for growth in the market as the broadband penetration rate is currently only 2%, compared to the OECD average of 18.8%. For most of Africa, Internet access and use is even lower, often well below 5 percent, with over 60 percent of Africa’s population living in unconnected rural areas (Commonwealth African Rural Connectivity Initiative, 2009).

*Table 1. Different types of digital divides*

	<b>Types of Needs</b>	<b>The Type of Divide</b>	<b>Comments</b>
1	Basic needs	The real divide	This includes access to clean water, electricity, justice etc.
2	Hardware – software	Material divide	Poor access or costly technology
3	Mentality – content	Mentality/opportunity divide	How will the Internet really help me?
4	Skills – knowledge – support	Utilisation divide	Lack of basic computer skills and user support
5	Culture – language / social diversity	Suitability divide	The alienness of the Internet; it is modelled more on a Western cultural background

What is the cause of such low connectivity and hence low penetration rates? There is a need for continued incremental and more methodical process of liberalisation and privatisation of the telecommunications sectors in many African countries and a variety of regulatory safeguards need to be put in place to foster competition and promote a conducive environment to assist in connectivity. For example, in South Africa, until 2008, fixed line provision was via the 'parastatal' Telkom monopoly, and prices were deemed extremely uncompetitive, providing a disincentive for consumers to go 'on-line' and hence access e-government facilities. Only in 2009 has a rival, Neotel, come on stream, and this mainly in the commercial urban conurbations rather than the rural areas.

In an effort to improve intra-governmental e-government, South Africa recently announced R378 million to provide "backbone transmission services." The Next Generation Network (NGN) will replace government's current single wide-area network and provide improved stability, capacity and additional services, such as advanced data, voice and video with the intention of making "the single public service a reality" through interoperability and seamless service delivery. Public service delivery would be improved through e-education, telemedicine through e-health projects, connectivity to multipurpose community centres, and strengthening collaboration between the three tiers of government (national, provincial and local).

The project will be implemented by the State Information Technology Agency (Sita), and by using Neotel, twice the amount of bandwidth will be available. The company's "bandwidth on demand" was much cheaper than the next closest offer. In utilising Neotel, Sita is ensuring that cheaper telecommunications for government than was previously available. Currently, a small proportion of Internet users in SA have access to government websites. However, the Batho Pele Portal and the associated call centre provide an

opportunity for the public to provide feedback and comment on government or any matter of interest to the citizen.

## **CONCLUSION**

The problems typical of a developing country, such as poor infrastructure, skewed accessibility, corruption, weak educational systems and a history of oral tradition in rural areas (Naidoo, 2008) have been highlighted. SA has experienced increased pressure to deliver an integrated and effective service in the face of public pressure for government services from society. Bureaucratic culture and systematic administrative and political obstacles inherent in government departments pose enormous obstacles to the ability of the SA government to meet these growing challenges.

The continued roll-out of the 'information phase' has characterized the bulk of e-government rollout, with limited online transactability, or mechanisms that allow citizens access to frequently demanded services as close to the customer's home as possible (such as walk-in or call-centres). While it is increasingly common for government departments in SA to have their own Web sites offering a range of white papers, green papers, legislation, policies, speeches and annual reports for download, these are purely informational. There are delays in progressing beyond information-rich Web sites to real e-transactability. With the exception of SARS, discussed above, there is little evidence of transactional Web sites in SA. The portal approach has taken shape with the National government Web site and the introduction of a central services portal, [www.Services.gov.za](http://www.Services.gov.za), sitting alongside the National and Cape Gateways (<http://www.gov.za/structure/pubserv>). Unfortunately, the trend in SA is very much towards provision of information alone, with little in the way of full-on transaction with the government. On a positive note, the National services portal bodes well for South Africa's e-government progress and future

development. While there is some evidence of the portal approach, offering a single point of entry to services (National Gateway and Cape Gateway), these are very much geared toward providing basic information, rather than allowing the public to transact with government online.

When considering policy intent, it would appear as though the South Africa's e-government strategy intends to reach all the tiers of government (provincial and local) primarily responsible for service delivery (Naidoo & Kuye, 2003). However, with the case of the e-Justice of the Department of Justice and Constitutional Development and Administration and e-Natis initiative of the Department of Transport, it appears as though this has not happened in practice (e-Gov, News Oct/Nov 2007) and (Mail and Guardian 2007). A real and considerable challenge that remains in the implementation of e-government amongst the lower tiers of government lies in the access, cost and availability of the internet (including telecommunications infrastructure and computer resources) in order to ensure that local governments, and their constituencies, are the final recipients of such as e-government strategy. Once the implementation of the e-government strategy has taken place at the lower tiers of government, reaching the people at grassroots, then only can South Africa's e-government strategy be regarded as successful and truly customer focused.

In South Africa, a great number of challenges arise from the increasing need of the Internet, particularly in the private sector; as well as increasing demands placed on government by citizens for developments in keeping with the private sector and the international community. Questions ultimately arise as to the ability of the South African organisations to meet these challenges in the face of the inherent bureaucratic culture and the structural administrative and political hierarchy of government. In order for internet initiatives to be successful in SA, adequate time and sustained collaboration with all levels of society are critical.

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