Advances in ICT Beneficial to Government and Education in a Post-Apartheid South Africa

Liza C. Van Jaarsveldt[1]

ABSTRACT

This paper looks at the advances that have been made in South Africa with regard to the use and development of information and communication technology (ICT) since1994. The South African government has realized the importance of ICT and has taken the initiative to provide some services and information over the Internet. Apart from government, education has also undergone various changes and developments with regard to ICT. Online education has proven especially useful in providing knowledge, skills and education to citizens and public officials working and staying in remote areas of South Africa.

Keywords: Information and Communication Technology (ICT), Government, Online Education, Internet, Initiatives, Development, Society, South Africa.

1. Introduction

In 1994, with the first democratic order being elected, South Africa entered a period of transition, growth and change. After 1994 government, schools, universities and education in South Africa have undergone various developments, changes and transformations. One of the biggest transformations and developments that took place was in the area of information and communication technology (ICT). Since 1994 the Internet and information and communication technology has changed the way many South Africans learn, work and do research. Online education specifically has become increasingly popular with students studying in South Africa. Online education also has the benefit of providing learners with new skills, abilities and knowledge to make proper use of new and changing technologies. Universities have seen the benefits of using technology like the Internet and online education and some institutions started making use of these technologies to teach and share knowledge.

The use of new technology to teach for example government officials is of great importance since South Africa is in need of skilled and educated government officials to serve the public. It is also not uncommon that some public officials work in outlying regions and in many cases in poor conditions. Due to distance, time and financial constraints it is impossible for such officials to travel to a university or to become engaged in a full time, three year study for a degree. Technology and online educational programmes provide opportunities to address these problems. Technology and the Internet, provide universities with a new way of reaching, communicating and interacting with students in various subjects and fields.

The purpose of this paper is to look at advances and developments that took place in South Africa with

[1] Department of Public Administration and Management, University of South Africa–South Africa (Email: vjaarlc@unisa.ac.za, Telephone: +27 83 5505396)

regard to information and communication technology since 1994, as well as the influence that technology had on government and education in a post apartheid South Africa.

2. The Impact of Technology and Online Educational Programmes on the South African Government

As indicated above, the South African government is aware of the importance of technology and the impact that technology could have on education and work performance. Technology does not only have an influence on pupils and students but also on the public service by and large. The purpose of the public service is to serve the public. One of the important prerequisites of the *Constitution of the Republic of South African*, 1996 is the maintenance of a public service that is efficient, effective and career oriented. This requires human resources, and it therefore goes without saying that one of the major tasks in the public service lies in the field of human resource management. The responsibility for the training of 1,2 million public servants extends to each government department, province and each public servant. In the Budget vote speech 2002, Geraldine Fraser-Moleketi, the Minister of Public Service and Administration stated that the reality in the public service with regard to information and communication technology (ICT) literacy is very sad. The Minister stated that government spends an estimated R3bn per annum on ICT goods and services, but that only 20 percent of public servants are computer users. According to Minister Geraldine Fraser-Molekete ICT can play a substantive role in government. ICT can for example, be used in the fight against poverty and to improve service delivery. According to the Minister the public service are in need of new skills and education to develop their ability to use ICT to its full potential (Minister Geraldine Fraser-Moleketi, Budget vote speech: 2002).

Furthermore, as mentioned above in South Africa many public officials work in outlying regions and in many cases in poor conditions. Due to distance, time and financial constraints it is impossible for such officials to travel to a university or even take the necessary three years to study for a Public Administration degree. Online educational programmes appear to be the unique mode of instruction to solve these problems and provide in the needs of the government. By placing a subject like Public Administration on the Internet, universities will reach more public servants and students than will normally be the case, and as such also be conducive to securing well trained public servants for the future, irrespective of their location.

Resent research done by Laschinger and Goldstuck (2006: 1) indicates that the number of computer and technology users in South Africa have grown since 1994 and has passed the 5 million mark. With the increased growth, use and availability of technology in South Africa, the need for the education of government officials to use these new technologies is getting more important. Government will also in the future be under increasing pressure to provide citizens with relevant and necessary public services online.

3. Government Initiatives with Regard to Technology

The increasing pressure on the South African government to provide more and better services to the public is growing. The need to provide services by making use of new technologies has also increased after 1994. The South African government's commitment towards improving information dissemination across the population was illustrated in 1995 when Mr. Thabo Mbeki (then Deputy President of the RSA) stated at the G7 meeting of the information society in Brussels, "we must strive to ensure that each individual whatsoever his or her station in life play a meaningful role in decision making and in governance. One of the ways this can be done is to ensure that citizens have access to information". Some of the government's initiatives to provide services and information by making use of new technologies include the following:

3.1 South Africa Government Online Web-site

In the Budget vote speech for 2002, the Minister for Public Service and Administration announced that South Africa On-line is a single electronic Gateway that will facilitate access to all information about, and

services provided by the government. The overall vision that will be provided by the Gateway as it is known is to provide access to government services, anytime, any place, within a clearly defined and executed e-government strategy. Access to services is the most important aspect of the Gateway. This initiative implies an end to cumbersome processes and traveling long distances to visit a multitude of government departments to conduct business. The South Africa Government Online Web-site has over the past year increased its information that is available to the public. Information that is available on the web-site includes the following:

- Access to government department web-sites.
- Obtain government documents.
- Obtain government reports.
- Download various government forms; these include some of the following forms: visa applications, passport applications, birth certificates, marriage certificates, death certificates, temporary residence permits, permanent residence permits, application for registration as a voter and unemployment insurance fund registration.
- Download all government speeches.
- Get a South African overview.
- Obtain information about travel and tourism.
- Look at government notices.
- Download the various acts, bills and draft bills.
- Look at new government tenders and tender regulations.
- Frequently asked questions about the South African Government system.
- News statements made by the South African Government.

From the above information it can be seen that the South African Government online web-site has increased its services and information to the public since it was started in 1999. Apart form the South African government online web-site, the South African government has embarked on a number of other initiatives.

3.2 E-Filing – Tax

The South African Revenue Service's (SARS) e-filing of tax is a co-ordinated effort between SARS and private business. The private businesses identified as service providers, have been appointed by SARS to provide Internet based electronic tax filing and payment services. E-filing of tax was launched in 2003 and has since then grown into a preferred method of completing tax returns for individual taxpayers and businesses. An increasing number of individuals and businesses are using this system every year. Currently an estimated 3,8 million tax returns are submitted via e-filing each year. The e-filing system offers various benefits to users including almost instantaneous communication with SARS. This is also a paperless system that is easy to use and easy to trace with a full history and report of submissions, payments and electronic correspondence available to users. The e-filing system also has the benefit of being available to users 24 hours a day and 365 days a year. This system is helping in changing the face of traditional government service delivery to taxpayers in South Africa (SARS e-filing, 2007).

3.3 E-Justice

Advances in cyberspace, business pressures, developments in information technology and globalization, requires that the justice system of a country be re-evaluated. E-justice aims at improving the effectiveness and efficiency of prosecutors in the process of jurice prudence. In essence the e-justice programme supports the fundamental reforms necessary to establish a more fair, accessible and efficient system of justice in South Africa. The purpose of the programme is to reform and modernize the administration and delivery of justice through re-engineering work processes. Currently courts have huge backlogs and prisons in general are overcrowded with a large number of trial-awaiting prisoners. E-justice is one of the ways in which the

Department of Justice is trying to alleviate some of their problems. The use of new technologies for the e-justice system has strengthened capacity in the Department of Justice, for example, the police are now able to schedule at the police station onto the system first appearance hearings. This will notify the courts as soon as any new data is entered onto the system ensuring that the court can prepare in advance. The system also has a daily financial reconciliation system that administers all monies received at courts for maintenance, bail, admission of guilt, civil cases, contributions and estates. Calculations of arrears are also instantaneous and payouts are also much quicker. Data is now stored electronically and can no longer go missing and this is helping in reducing corruption and fraud in the justice system. Technology has definitely added value to the functioning and performance of the Department of Justice (Department of Justice, 2004).

3.4 Department of Trade and Industry – Black Economic Empowerment Database

The Department of Trade and Industry (DTI), in partnership with a number of non-profit industry organizations has developed a database of Black Economic Empowered (BEE) companies. The first phase ended in March 2003, with a database of 250 companies. The second phase has now been completed, adding an additional 600 companies to the list, making it one of the most up to date lists of its kind in South Africa. The database is a valuable tool to provide Black Economic Empowerment companies with a powerful marketing platform to showcase their companies and initiatives to both local and international businesses, organizations and interested persons. (DTI: 2007.)

3.5 State Information Technology Agency (SITA)

The democratic elected government accepted and realised early in its tenure that service delivery could best be enhanced through efficient use of information and communication technology. In essence the need to improve service delivery gave rise to the State Information Technology Agency (SITA) that was established in 1999 by the South African government and focuses on the effective and efficient provision of ICT products and services across the three spheres of government namely national, provincial and local government. SITA consolidates and coordinates the government's information technology resources in order to achieve cost savings. SITA is committed to providing information and communication technology (ICT) as a strategic resource for government. In short, SITA is the ICT business for the largest employer and consumer of ICT products and services in South Africa – the government. SITA also does ICT research for all government departments and compiles and maintains an up-to-date inventory of information systems of government departments. (SITA: 2007.).

3.6 2010 FIFA world cup web-site

The South African government has launched a web-site sa2010.gov.za to provide information on government's preparations for the 2010 FIFA world cup. This web-site provides information about the country and the continent in the context of the first African world cup to be held on the continent. The web-site is complementary to the web-site of FIFA and the local organizing committee. An important part of the web-site is up to date news on preparations that is being made for the world cup. Other helpful information on the web-site include the provision of comprehensive information on South Africa, governments programmes, information about the world cup venues, projects and activities including those related to economic opportunities in the country (GCIS: 2007 & sa2010.gov.za).

3.7 Gauteng Online

Gauteng online, one of the first provincial web-sites in South Africa, offers various services and information to citizens staying in the Gauteng province. The interactive web-page offers information on the Gauteng province, daily weather and news and events. Gauteng online also looked at providing every school in the Gauteng province with at least 25-networked computers. This will enable 1.5 million pupils with access to e-mail and the Internet. Teachers in this province will also be provided with ICT training.

The Department of Education in the Gauteng province has already started with a pilot project in 25 schools in the province. Gauteng online aims at giving pupils in the province the necessary ICT skills they need to enter the job market and to reduce unemployment in the province. It is also possible for pupils to view past examination papers on the Gauteng online web-site and to get their matric results. (Corp Watch, 2002 & Gauteng online, 2007.)

3.8 Cape Online; An E-Government Strategy for the province of the Western Cape

Cape Online is a service-driven and citizen-focused e-government initiative. The vision of Cape Online is to deliver access to public services online anytime, anywhere. The goal of Cape Online is to improve the internal efficiency and a more effective service by the Provincial Administration to the community. Cape Online is an example of a global trend towards greater levels of interaction between government and citizens. The Cape Online project can be used as an example of what can be done in government and other provinces. Another objective with the Cape Online initiative is to promote economic democracy. All provincial and local government tenders will be published online; citizens will subsequently have the opportunity to respond to tenders online as well. This project can be seen as a very important empowerment initiative of the Western Cape Province (Cape Gateway, 2007). Apart from the above mentioned government initiatives to use new technology to promote the access to information and improved service delivery in South Africa, online education has also benefited greatly from using the Internet and new information and communication technologies to provide information and education to remote areas of Africa, Southern Africa and South Africa.

4. Online Educational Programmes in South Africa

The increased use of computers and technology in government and South Africa have benefited the development and use of online educational programmes that has the possibility of reaching more Africans and South Africans including government officials than was previously possible. Examples of these online educational web-sites include the following:

4.1 The African Virtual University (AVU)

Africa is a vast continent, with 53 countries and a population of more then 700 million. There is a high need for good quality education at tertiary level on the continent. Many people normally live far from schools and universities and in many cases are unable to enroll in a traditional university due to limited resources. The African Virtual University was launched in 1997; the AVU enables students in Africa, including South Africa to take courses and seminars from universities around the world (Light, 1999:1 & AVU, 2006). The AVU delivers its courses to remote regions by making use of distance learning centers. The distance learning centers have cameras, computers, satellite equipment and Internet capabilities. The courses offered at the AVU are mainly focused on government management, or organizing essential community activities. For example one of the courses addresses poverty issues and the maintenance of sound government.

Since its launch in 1997 the AVU has provided students with more then 2,500 hours of interactive instruction in English and French. More then 12,000 students have completed semester long courses. It is also interesting to note that students who study at the AVU pay substantially lower study fees than full time students. This aspect is important for a continent that has a large number of poverty stricken countries. Lower study fees make it possible for larger groups of students to engage in educational programmes at well established first world universities, for example the AVU, is offering Computer Science degrees from the Royal Melbourne Institute of Technology in Australia. Through the AVU travel and other related costs are also minimized (AVU 2006).

4.2 Telematics for Africa Development Consortium

The Telematics for Africa Development Consortium was established in August 1995. The establishment of the Telematics for Africa Development Consortium was coordinated by the CSIR (Counsel for Scientific and Industrial Research – South Africa). The vision of the Consortium is to use information technology to improve Africa's access to and use of information for community development and education. The founder members originally established the Consortium as a means of raising funds to finance various pilot projects. The projects include the improvement of access to educational services by less advantaged communities (SAIDE, 2007). The Consortium is now an open information network, which include a number of government organizations, foundations, NGO's, private sector enterprises and educational institutions. The aim of the consortium is to develop Africa's information infrastructure and help to improve Africa's human resources. Currently the Telematics for Africa Development Consortium has over 90 members from the whole of Africa (SAIDE, 2007). The Telematics for Africa Development Consortium can benefit the African continent and South Africa in various ways. Member organizations will be able to gain access to a single network structure that contains a wealth of information on telematic related development activities in South Africa and throughout Africa. Member organizations will also be exposed to a number of organizations on the continent with the same aims and purpose then their own. Members of the Telematics for Africa Development Consortium will gain an important outlet for sharing information and activities. (SAIDE, 2007.)

4.3 The Distance Education Association for Southern Africa

The Distance Education Association for Southern Africa (DEASA) started as the Distance Learning Association for Southern Africa (DLA) in 1972. The founder members were Botswana, Lesotho, South Africa and Swaziland. The current DEASA membership includes Botswana, Lesotho, South Africa, Namibia and Swaziland. DEASA is a non-profit Association with the main responsibility of promoting distance education in the Southern African region (SAIDE, 2007). During 2003 the member countries initiated a strategic planning process to become the regional expert on open and distance learning. DEASA has the responsibility to nurture and support SADC member states in providing distance learning to a large number of people in the region that do not have access to education (DEASA, 2006). The aims of DEASA can be seen in Table 1.

Table 1: The aims of DEASA *(Adapted from SAIDE, 2007 & DEASA 2006)*

To provide a platform for discussing issues affecting distance online education in Southern Africa.	To exchange expertise as widely as possible in the SADC region.
To exchange information and materials in distance online education in the SADC region.	To promote educational activities and opportunities for the region.
To promote assistance from national governments and international organizations for distance education.	To collaborate with governmental as well as non-governmental governmental organizations to promote effective distance education policies, methods and practices.
To present and promote to governments and funding organizations the interests of distance education.	Encourage members to maintain DEASA's Code of Ethics for distance education.

By becoming part of DEASA, SADC members can improve distance learning and can even produce distance learning materials for export to other less developed regions on the continent to help to reverse illiteracy and to promote the African renaissance.

4.4 The South African Institute for Distance Education (SAIDE)

The South African Institute for Distance Education (SAIDE) is committed to increasing democratic access

to knowledge, skills and learning. SAIDE has a major impact on defining and detailing quality distance education standards. SAIDE has conducted a number of in-depth evaluations into distance education programs (SAIDE, 2007). Recently SAIDE conducted research with M-Web on Internet and satellite technology in teacher education. SAIDE also developed a plan for the South African Broadcasting Corporation (SABC) to implement school-based education and is currently busy establishing an action plan for the broadcasting of adult educational programmes and School Net South Africa (SAIDE, 2007).

4.5 School Net South Africa

School Net South Africa is a distance education project. The project was started after a study by the Technology Enhanced Learning Initiative (TELI) and SAIDE. This project aims at bringing connectivity to at least 200 schools in South Africa. The School Net project also incorporates an online set of curricula and a methodology on curriculum development. This is helpful in creating an electronic classroom, which could assist teachers and learners to gain access to more information (IDRC, 2002). School Net South Africa is working hard to be at the forefront of ICT implementation strategies in schools in South Africa. The unique competencies of School Net South Africa include project management and consultation, technical services and support, research and knowledge management and educator development in ICT (School Net SA, 2007).

From the above mentioned it is clear that ICT and distance education can make a substantial impact on South Africa with regard to providing information and education to far off regions. School Net South Africa is one example of a distance learning structure that are providing education and knowledge to citizens and regions of the country that previously did not have access to such facilities. When information and communication technology is successfully integrated into teaching and learning it can bring about meaningful interaction of learners with information. ICT's can advance a higher order of thinking skills such as comprehension, problem-solving and creative thinking and can possibly enhance employment opportunities. The successful use of ICT in education can ensure that learners will be equipped for full participation in the knowledge society. These learners will also in the future be more likely to make use of e-government processes and services and will most likely make use of ICT to interact with government (Draft White Paper on e-Education, 2003: 14).

5. Future Challenges and Opportunities for South Africa

South Africa's technology initiatives are at present supported by all government departments. The next phase of South Africa's technology projects should be to grow and focus on progressing from information dissemination to more and improved service delivery. The focus will then be placed on the services which are available, who qualifies for such services and where and how to access such services. This next phase should, therefore, aim to enable users to become more involved in online transactions, services and activities.

In the future the main challenge for a country like South Africa is to become increasingly proactive rather then reactive in the development of information and communication technology. South Africa already has a strong base to build on that was created after 1994. However, to participate fully in the ICT sector, South Africa must develop and work hard to meet world standards. This will include an improvement to existing educational and training capacity as well as preparing its population to participate in the information society. The government in South Africa should involve the population more in the development of ICT. The expansion of ICT could improve the lives of many ordinary South Africans by developing and producing a pool of ICT proficient individuals that could become ICT engineers, programmers and software developers. The development of ICT proficient individuals in South Africa can also contribute to improve capacity building, growth and an improved utilization of technology in government.

The South African government should however take the following three aspects into consideration when determining the future of ICT development in the country. Firstly, the cost that is involved in further developing ICT in South Africa. Secondly, the sustainability of ICT in South Africa, and thirdly, the efficient utilization of ICT goods and services by the country, especially in remote areas.

6. Concluding Remarks

The use of new technology in South Africa has increased, grown and developed greatly since the first democratic elections of 1994. Government has realized the importance of information and communication technology to reach more citizens and provide better services. Since 1994 government has launched various successful initiatives and projects that are already functioning well and providing information and some services to citizens. The other area that has benefited from the developments in information and communication technology is education. The face of traditional education has changed dramatically in the post-apartheid South Africa. Technology brought new information and technology to students from around the world. Gauteng online is showing the importance of children learning new technology at school level to enter the job market. Technology also has the ability to take information, education and e-government to rural and remote areas of South Africa. New information and communication technology is giving the government in South Africa the opportunity to reach more people than was previously possible. Technology in the post-apartheid South Africa has changed the way that lecturers teach, students learn, research is done, work is completed and governments function.

References

1. AAU - Association of African Universities. 2007. Available at: http://www.aau.org last accessed: 2007.
2. AVU - African Virtual University. 2006. Available at: http://www.avu.org. Last accessed: 2006.
3. Blake, H. (2002). Studies of E-Government. Available at:http://www1.worldbank.org/publicsector/egovstudies.htm Last accessed: 2002.
4. Cape Gateway. 2007. Cape Gateway–easy access to government information and services. Available at: http://www.capegateway.gov.za Last accessed: 2007.
5. Orp Watch. (2003). South Africa: Biggest ICT education project draws flak, Available at: http://www.corpwatch.org Last accessed: 2003.
6. Cross, R. T. (1998). Developing Web-based Distance-Learning Courses for the AAC Community: A First Step. Available at: http://www.dinf.org/csun99/session0147.html. Last accessed: 2002.
7. DEASA (2007). Distance Education Association of Southern Africa (DEASA). Available at: http://wwwdeasa.org.za Last accessed 2007.
8. Department of Justice E-Justice. (2004). Available at: http://www.doj.gov.za/2004dojsite Last Accessed: 2007.
9. DTI (2007) Department of Trade and Industry (DTI). Available at: http://www.thedti.gov.za Last accessed 2007.
10. ELearners.com. (2002). The pros and cons of e-learning. Available at: http://www.elearners.com/elearning/q2b.asp. Last accessed: 2002.
11. e-LearningHub.com. (2002). Ready for e-learning. Available at: http://www.e-learninghub.com/ readyfore-learning.html. Last accessed: 2002.
12. Fraser-Moleketi, G. (2002). Budget vote speech 2002: We are changing for the better of the people of South Africa. Available at: http://www.gov.za/speeches. Last accessed: 2002.
13. Gauteng online (2007). Gauteng provincial government portal. Available at:http://www.gautengonline.gov.za Last accessed: 2007.
14. GCIS (2007). Statement on the launch of the government web-site on preparations for the 2010 FIFA word cup. Available at: http://www.gcis.gov.za/media/relaeases/070606.html Last accessed: 2007.
15. Gubbins, J. & Clay, M & Perkins, J. (1998). The development of an online course to teach Public Administrators computer utilization. Available at:http://www.westga.edu/-distance/gubbins22.html. Last accessed: 2001.
16. Hoey, I. (2002). "Usable Web-based Instruction Resources". Available at:http://www4.ncsu.edu:8030/~brad/~-m/Research/WU/usable-wbi.html. Last accessed: 2002.

17. IDRC in South Africa Web-site. (2002). Available at: http://www.idrc.za. Last accessed: 2002.
18. Laschinger, K. & Goldstuck, A. (2006). World wide worx, leading s in technology research in South Africa. Available at: http://www.theworx.biz/pcmarket06.htm. Last accessed: 2006.
19. Light, D.A. (2001). African Virtual University – Pioneering distance education in Africa. Available at: http://www.avu.org/ uf/harvBus.htm. Last accessed: 2001.
20. Moolman, Van Rooyen, & Van Wyk. *Outcomes based Governance: Assessing the Results*. Cape Town. Heinemann Publishers.
21. S A (2010) Africa's time has come! South Africa is ready! 2007. Available at: http://www.sa2010.gov.za Last accessed: 2007.
22. SAIDE. (2007). The South African Institute for Distance Education. Available at:http://www.saide.org.za/ information.html. Last accessed: 2007.
23. SARS E-Filing. (2007). South African Revenue Service E-Filing. Available at:http://www.sarsefiling.co.za/ whyefile.aspx Last accessed: 2007.
24. School Net. (2007). "SA schools are Africa's leaders in online connectivity". Available at:http://www.school.za/news/ pr/19990311-connectivity.htm. Last accessed: 2007.
25. SITA (2007). State Information Technology Agency (SITA) Available at: http://www.sita.co. za Last accessed: 2007.
26. Southern Africa Global distance education net. (2007). Available at:http://www.saide.org.za/worldbank/ Policy/global/ p31abot.htm. Last accessed: 2007.
27. South Africa (Republic). Department of Education and Department of Communications. (2001). Strategy for Information and Communication Technology. Government printer.
28. South Africa (Republic). Draft White Paper on E-Education. (2004). Transforming Learning and Teaching through Information and Communication Technology (ICT). Government printer

About the Author

Liza Ceciel van Jaarsveldt received a BA degree from the University of Pretoria, in South Africa in 1996 and obtained a BA (Hons) in Public Administration at the same University in 1997. In 2000 she received a Diploma from the Erasmus University in the Netherlands and the Pretoria Technikon for completing a course in Safer and Healthier Cities. In 2003 she obtained a MA Degree in Public Administration also from the University of Pretoria. The title of her dissertation was: "Web-based training in Public Administration in South Africa: Principles and considerations". Liza is currently enrolled for a D Litt et Phil: Public Administration degree at the University of South Africa (UNISA). The title of her thesis is: "The acquisition of practical skills such as Information Technology competence through undergraduate Public Administration curricula" At present Liza is a lecturer at the Department of Public Administration and Management at the University of South Africa (UNISA). Prior to joining UNISA, she was employed at the Central University of Technology in the Free State (from September 2003 until December 2005). Her academic career started in 1999 at the School of Public Management and Administration at the University of Pretoria in South Africa. During her time as a student at the University of Pretoria she served on various committees, organizations and councils. She was elected to the Student Representative Council (SRC) for two terms (from 1997 – 1999). In 1999 she received a gold medal from the University of Pretoria for outstanding community service.