

e-Governance for Social and Local Economic Development

Gauteng City Region perspective

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ABSTRACT: PURPOSEFUL E-GOVERNANCE FOR SOCIAL AND LOCAL ECONOMIC DEVELOPMENT

South Africa's development challenges are significant for a small country and include race, gender and income inequality. Income and information poverty limit the opportunities for effective economic participation and social development, but can be addressed through governmental policy and other e-development interventions. The research explores the questions (a) what alignment exists between e-government initiatives and social and local economic development objectives and (b) how does e-governance promote the selected good governance characteristics of strategic vision, responsiveness and transparency? The research findings indicate that the relationship between e-governance and social and local economic development is weak, with unco-ordinated action and spending and lack of a common strategic vision amongst the local governments and provincial government engaged in the provision of public services. These findings are based on a review of activities in the province of Gauteng, the field of study, including a website review, analysis of key documents and case studies of the Gauteng Emergency Medical Services and the SAPS Operations Centre for Gauteng.

The study makes specific proposals aimed at fostering strong linkages between e-local governance and social and economic development. These include proposals that strategies for growth and development (and IDPs) should have explicitly stated social and local economic development objectives based on identified priorities, supported by the definition of an e-governance or 'digital city' strategy that will foster such objectives. Issues in web-based content management are discussed as a key aspect of promoting e-local governance. The paper presents eight (8) strategic initiatives for promoting e-governance at local level and draws the attention of policy-makers and public service managers to the development purpose of e-governance.





e-Governance for Social and Local Economic Development:

Gauteng City Region perspective

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INTRODUCTION

This study on e-Governance for Social and Local Economic Development is focused on the province of Gauteng, the economic hub of South Africa, and its 14 municipalities that constitute the system of local government. The research was undertaken in the period February 2007 to August 2008. The choice of Gauteng as a study area is informed by the vision to re-create the province as a globally competitive city region. Achieving the objective of being a 'global city-region' is dependent, inter alia, on having similar social and economic capabilities to other global cities. In the early 21st century, ICT innovation broadly and, electronic governance in particular, are characteristic of such places. Many cities style themselves as 'digital cities' or cities where communication and transactions are conducted using electronic devices and networks.

From an ICT for development perspective, all municipalities can adopt effective e-governance for social and local economic development. South African city and municipal governments can build such e-governance within a broad development approach. They can activate e-governance programmes that enable citizens, business and SMEs to interact with government using the full range of electronic media, through incorporating relevant measures in growth and development strategies (GDS) and integrated development plans (IDP).

The study forms the South Africa component of the LOGIN Africa research project (Local e-Governance IN Africa), a study conducted in nine African countries.¹ The study incorporates a review of the relevant literature and presents a conceptual framework for e-governance. It is based on data from interviews and consultative workshops conducted with metropolitan, district and local municipalities and a survey of the Emergency Medical Services and SA Police Services Call Centre for Gauteng, as well as a review of municipal websites.

The report presents the findings and recommendations of the study, which was designed to explore the challenges of ICT enabled development at local government level, within the context of a developing global city region. Local and provincial governments, the Centre for Public Service Innovation and the South African Cities Network may find particular relevance in this exploration.

CONTEXT FOR THE STUDY

South Africa is classified as an upper-middle income country, yet the society suffers high levels of poverty and of inequality. In Gauteng, poverty affects up to 15% of households in the metropolitan areas and up to 50% of households in the local municipalities, with a number of poverty pockets of greater than 50% of households.² South Africans experience many forms of poverty, including infrastructure, services and information poverty. Information poverty refers to lack of access to and utilization of information and communication technologies and the services that they facilitate, including electronic transactions and Internet banking, government services online, access to online educational content or entertainment. The South African digital divide shows major differences in ICT access between and within provinces. Gauteng is no exception to this divide, with levels of access to voice and data communications ranging from high to low based on household income levels. For the majority of the provincial population, communication choices are either a call from a public phone at a nearby terminal or a short call or SMS from your own mobile phone.

A feature of South Africa's ICT landscape is the rapid growth of the mobile telephony market. In the period 2000 – 2008, mobile telephony grew significantly, with the market offering affordable contact via SMS, availability of second-hand handsets and pre-paid call packages at lower cost than for landlines. However, mobile communications is not often used by low income households or by small businesses for data communications, whether to access social services or to conduct economic activity. Thus mobile growth masks the “..development of the ‘data divide’ between those with access to the Internet and the benefits it provides and those without access”³. Internet penetration is low due to high access prices relative to income and broadband Internet is priced out of the range of the vast majority of households. Proposals to create a municipal broadband market in order to promote affordable high-speed data access are not yet implemented.

The following table, extracted from data collected for Statistics South Africa's Community Survey 2007⁴, confirms the view that the evolution of e-governance in South Africa will hinge to a large extent

¹ Study countries include Egypt Ethiopia, Ghana, Kenya, Mauritius, Morocco, Mozambique, South Africa, Uganda.

² Human Sciences Research Council (2005). *Poverty Pockets in Gauteng: How Migration Impacts Poverty*. Pretoria: Urban Rural and Economic Development, HSRC.

³ Gillwald *et al* (2005). *Towards an African e-Index*. p. 130

⁴ Statistics South Africa (2007). *Community Survey 2007: Municipal Data on Household Services*. Pretoria: StatsSA.





on households having access to a cell-phone, since households are three times more likely to have a cell-phone than a landline and little more than one tenth of households have Internet facilities.

ICT Access	Yes	No
Cell-phone	81%	19%
Landline telephone	25%	75%
Internet facilities at home	12%	88%
Radio	80%	20%
Television	75%	25%

These basic ICT statistics, while providing limited insight into the community level of ICT penetration, do suggest that the successful application of e-governance as far as e-services is concerned would need to be based on the realities of low levels of Internet access and high levels of mobile voice and data (SMS) access. SMS or short-message service is extensively used in the commercial environment from financial services such as credit card debits and account payment notification to advertising. Similarly, municipal (and provincial) government needs to create a menu of e-governance interactions that will be valued by citizens with a high profile given to SMS and other mobile applications.

PUBLIC SECTOR REFORM, GOOD GOVERNANCE AND ICT FOR DEVELOPMENT

e_Governance requires an institutional context within which it can flourish. Key components of an enabling context include public sector reform to improve service delivery, good governance and applying ICTs for development.

Public sector reform was a major theme in the nineties literature on managing public institutions, from the ‘reinventing government’ concepts in the United States⁵ to the ‘computerisation of the public service’ in Malaysia.⁶ These concepts were drawn from study and interpretation of the multiple changes taking place in public services around the world during the early period of ‘globalisation through technology’. The importance of public sector reform remains valid in South Africa today, still operating under the weight of a rule-driven bureaucracy, rather than a flexible bureaucracy energised by management excellence.

Good governance addresses the responsibilities of the state, private sector and civil society to create an environment within which human endeavour can benefit society. It focuses on political, economic and administrative components of governance. “Good governance ensures that political, social and economic priorities are based on broad consensus in society and that the voices of the poorest and the most vulnerable are heard in decision-making over the allocation of development resources.”⁷

⁵ Osborne, D & Gaebler, T. 1992. *Reinventing Government: How the entrepreneurial spirit is transforming the public sector*. New York: Plume Books.

⁶ Government of Malaysia 1995. *The Civil Service of Malaysia, Improvements and Development in the Civil Service of Malaysia 1994*.

⁷ United Nations Development Programme. ‘Governance for Sustainable Human Development: A Policy Document’, available <http://mirror.undp.org/magnet/policy/default.htm> 03 July 2006.

Information and communication technologies (ICTs) including telephony, computing and broadcasting, can contribute to sustainable human development and poverty eradication⁸ through making social communication easier and more affordable and by enabling speedy and secure economic transactions. “As accelerator, driver, multiplier and innovator, ... ICTs are powerful if not indispensable tools in the massive scaling up and interlinkage of development interventions and outcomes” in the 21st century.⁹

ICTs in the context of governance may also play a critical role in speeding up the flows of information and knowledge between government, citizens and business. According to the United Nations Development Programme (UNDP) the challenge for all countries is to develop a system of governance that promotes, supports and sustains human development.¹⁰ This assumes regular interaction and feedback, as envisaged in the community participation requirements for the municipal Integrated Development Plans (South Africa). Governments in many parts of the world have made huge ICT investments aimed at improving governance processes. e-Governance is regarded as the application of ICT to governance processes and decision-making, in ways that provide opportunities for citizens and communities to regularly receive information about government activities and to participate in government decision-making at relatively low cost. The expected benefits of such public sector reforms have been identified as, inter alia, increasing the efficiency of government operations (information and communications flows across institutions of government), strengthening democracy (through citizen participation in decision-making), enhancing transparency (by publishing government information), and providing better services to citizens and businesses¹¹ (through virtual, but direct interaction).

EVOLUTION OF E-GOVERNANCE

A large part of government business is information processing¹², whether in health records management, availability of curriculum content for schools, birth registrations or procurement. Each of these complex sets of activities have in the past suffered from inaccuracy and loss in data storage, limited availability of required information or lack of transparency of government actions. Hence, governments adopted electronic information systems as a means to addressing these and other failures.

The concept of e-governance moves utilisation of ICT beyond computerisation of administrative tasks to access to information for citizens and businesses. It specifically includes the idea of using ICT to address development challenges. The global shift towards adoption of ICTs as a major resource for governments emerged in the mid-nineties, initially with governments designing their own large information systems and data repositories and later with government to government (G2G) communication fostered by the advent of email and the Internet. The vast network

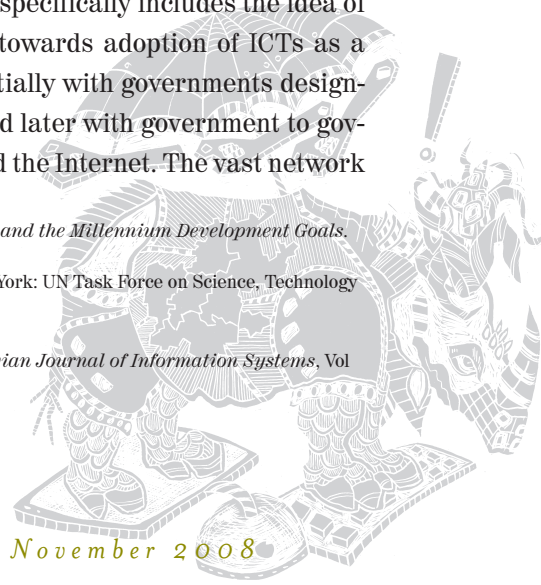
⁸ United Nations ICT Task Force (2005). *Information and Communication Technologies and the Millennium Development Goals*. New York: UN ICT Task Force.

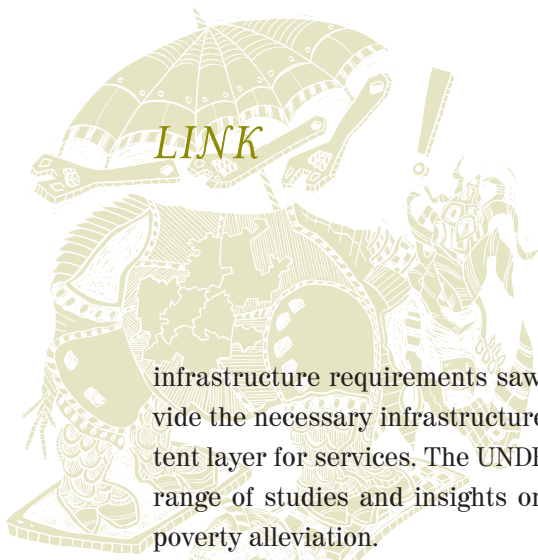
⁹ UN Millennium Project (2005). *Innovation: Applying Knowledge in Development*. New York: UN Task Force on Science, Technology and Innovation.

¹⁰ UNDP Good Governance Policy, see footnote 6

¹¹ Flak, L.S., Olsen, D.H. and Wolcott, P (2005). ‘Local e-Government in Norway’, *Scandinavian Journal of Information Systems*, Vol 17, No.2, pp. 41 – 48.

¹² Hood, C., (1983) *The Tools of Government*. London: Macmillan.





infrastructure requirements saw many governments establishing agencies to procure and provide the necessary infrastructure, while government departments focused on providing the content layer for services. The UNDP hosts an ICT for Development Observatory,¹³ producing a wide range of studies and insights on themes including e-governance, enterprise development and poverty alleviation.

As e-governance matures, it offers citizens a choice of channels and means for interaction with government, including information kiosks and so-called one-stop centres, but most notably Internet-based information and services.¹⁴ The government or services website has become a central feature of e-governance across the world, as information can be easily updated and new services added. In the case of municipalities, residents can communicate with government online as regards the efficiency and effectiveness of services. Advances in information security on the Internet have also led to greater trust and hence greater usage of Internet payment engines. The thrust of e-governance varies from strengthening the citizen-state engagement through, for example, publishing government information on-line and inviting input, comment and feedback; to using ICT to improve social and economic conditions through providing community access centres and encouraging ICT use among small businesses or urban poor and rural communities.

Countries like Singapore have been pioneers of advanced ICT use, for example, establishing an electronic court system, while countries like India have pioneered rural applications such as community-owned information kiosks and electronic rural land registration systems.

e-Governance, then, describes the use and impact of ICT in governance systems. It involves new channels for accessing government, new styles of leadership, new methods of transacting, and new systems for organising and delivering information and services.

PHASES OF E-GOVERNANCE

Various models are used to assess the progress governments make toward achieving e-governance. E-government maturity models that represent progress according to different phases of maturity have been widely adopted and provide the foundation for developing e-governance. The phases refer to a logical sequence that starts with publishing government information on the web, increasing the quantity, quality and value to the citizen over time. This is followed by the addition of interactive features for users, moving progressively towards offering full transactional capabilities. Although slightly different names have been given to the phases they all have the same basic structure as indicated in the table below:¹⁵

¹³ See UNDP ICT for Development Observatory, available <http://sdnhq.undp.org/observatory/> 21 November 2008.

¹⁴ Centre for Public Service Innovation 2003. 'Citizen Access to e-Government Services'. Report of a study conducted by Mohlaleng Strategy Consultants, Wits LINK Centre and SANGOnet for the CPSI, Pretoria.

¹⁵ Layne, KJL and Lee, J. 2001. 'Developing fully functional e-Government: A four stage model', *Government Information Quarterly*, Vol 18 No 2, pp 122 – 136; Moon, M.J. 2002. 'The Evolution of e-Government Among Municipalities: Rhetoric or Reality?' *Public Administration Review*, Vol. 62 No 4, pp 424 -433; Baum, C and Di Maio, A. 2000. *Gartner's Four Phases of e-Government Model*. Gartner-Group.

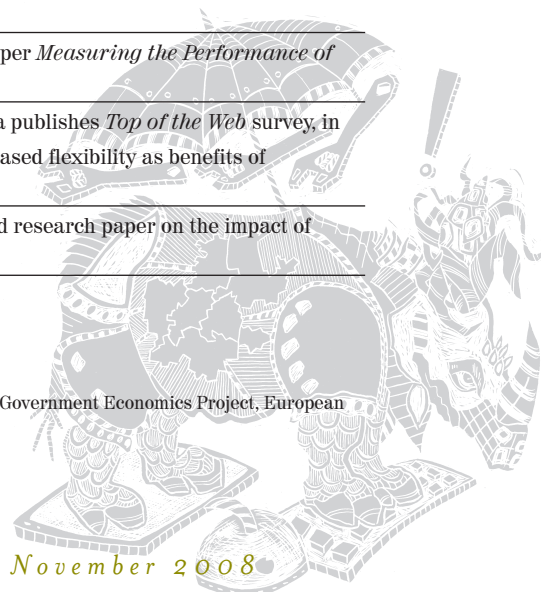
Phase	Description
Phase 1: Presence	Information dissemination, usually government-to-citizen (G2C), eg publishing policy or tender documents, regulations, promoting transparent government. Effective content management is essential from Phase 1 through all phases.
Phase 2: Interaction	Moves from publishing to interaction with citizens and businesses, enabling communication and feedback and processing of forms. Uses electronic data interchange (EDI) and email capability.
Phase 3: Transactions	Offers services and financial transactions capabilities, such as licence renewals, payment of fines. Features include electronic filing, digital signature, information security. Requires interoperable technologies, typically Internet-based.
Phase 4: Integration	Services are integrated across departments and levels of government for multi-channel, 'one-stop' service delivery, enabling greater responsiveness from all parties. Requires the integration of back-office systems.
Phase 5: Political participation	Promotion of channels for citizen participation, for example, voting online, public forums and opinion surveys.

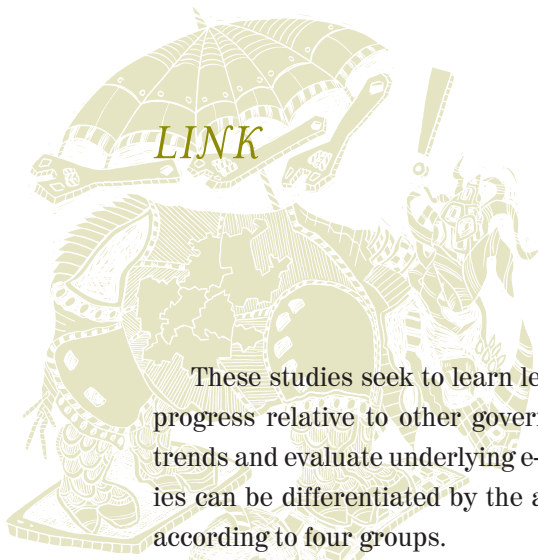
ASSESSING THE IMPACT OF E-GOVERNANCE

Whether the intended results of e-governance have been achieved is a matter of debate. This is informed by a growing body of research that indicates that results vary dramatically from one country to another and within countries. The list of studies, reports, benchmarking exercises, evaluations and measurements undertaken to explore relationships between the results and the resources invested, indicate that there is explicit concern for the manner in which public money is spent, as indicated below:¹⁶

October 2002:	US Chief Information Office releases the Value Measuring Methodology, a guide for measuring the values and benefits of electronic services to be used by federal agencies;
October 2002:	Performance Institute, a Washington based think tank, publishes the report <i>Creating a Performance Based Electronic Government</i> ;
July 2003:	Gartner presents the 'Public Value of IT' (PVIT) methodology to measure IT investments impacts over time on service level, operational efficiency and political return;
August 2003:	The UK Office for Government Commerce releases a guide on the measurements of e-Government costs and benefits;
February 2004:	Danish National eGovernment Strategy contains clearly identified targets and their respective measurement indicators;
March 2004:	IBM Centre for the Business of Government publishes the paper <i>Measuring the Performance of e-Government</i> ;
December 2004:	The e-Government Unit in DG Information Society and Media publishes <i>Top of the Web</i> survey, in which citizens and businesses identify time saving and increased flexibility as benefits of e-Government clearly perceived as such by the public;
February 2005:	EU IDABC e-Government Observatory releases a background research paper on the impact of e-Government on competitiveness, growth and jobs.

¹⁶ European Commission 2006a. 'Compendium to the Measurement Framework'. Brussels: eGovernment Economics Project, European Commission.





These studies seek to learn lessons from other governments' policies, measure e-government progress relative to other governments, identify and learn from best practice, discover global trends and evaluate underlying e-government concepts to identify points of leverage.¹⁷ These studies can be differentiated by the aspect of e-governance each focuses on and can be categorised according to four groups.

The first category assesses e-governance through the use of an index or benchmark that yields some sort of score that can be used to rank governments against each other or within themselves over time.¹⁸ These studies are often criticized for lacking in meaning and usefulness and suffer from problems with geographic coverage, methodology, bias or a lack of transparency.¹⁹ The second category assesses the supply of e-government applications and the success of a country's e-government is measured by counting the amount of visible applications.

The third category evaluates the demand side of e-government and measures success in terms of the actual levels of usage or levels of customer satisfaction with online services. A fourth category in which criteria and indicators for measurement of e-government are sought and proposed can be discerned.²⁰

A broad range of indicators have been developed for measuring e-governance. The following five categories can broadly be identified:

- Input indicators try to measure the resources countries have invested in e-government.
- Output indicators measure the number of e-government applications available.
- Usage indicators measure the usage of applications by citizens and businesses.
- Impact indicators try to measure the impact e-government has had.
- Readiness indicators are concerned with assessing the degree to which a country is 'ready' for e-government and its consequences.

¹⁷ Jansen, D., Rotthier, S. and Snijkers, K. (2004). If you measure it they will score: an assessment of international e-government benchmarking. *Information Polity* Vol 9 No 3-4.

¹⁸ Such as Accenture (2004). 'e-Government Leadership: High Performance, Maximum Value'. Toronto: Accenture, available <http://www.accenture.com> 04 August 2006; Capgemini (2005). 'Online Availability of Public Services: How is Europe Progressing?' Brussels: Capgemini, available http://europa.eu.int/information_society/soccul/egov/egov_benchmarking_2005.pdf 04 August 2006

¹⁹ Flak, L.S., Olsen, D.H. and Wolcott, P. (2005). 'Local e-Government in Norway', *Scandinavian Journal of Information Systems*, Vol 17, No.2, pp. 41 – 48.

²⁰ Jansen, D., Rotthier, S. and Snijkers, K. (2004). 'If you measure it they will score: an assessment of international e-government benchmarking'. *Information Polity* Vol 9 No 3-4.

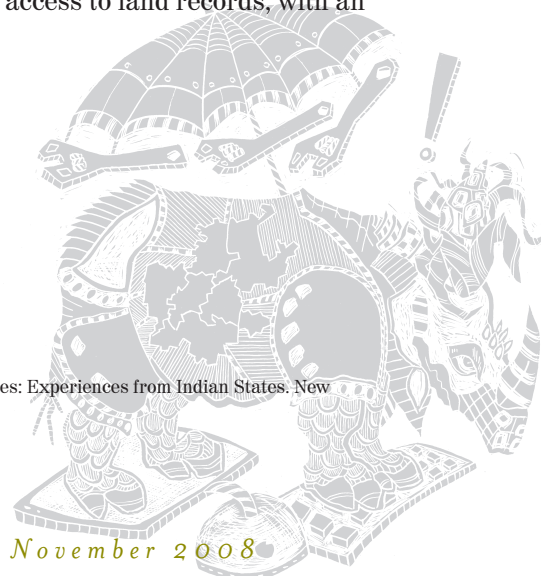
The categories of indicators with examples are highlighted in the table below:

Category	Example
Input indicators	<ul style="list-style-type: none"> ● Amount of financial resources dedicated to e-government ● IT spending as a percentage of GDP ● Amount of research devoted to research and development (R&D) ● Amount of public resources devoted to internet infrastructure
Output indicators	<ul style="list-style-type: none"> ● Number of online services for citizens/ businesses ● Percentage of government departments that have a website ● Percentage of government websites that offer electronic services
Usage indicators	<ul style="list-style-type: none"> ● Number of individuals/ businesses that have made use of electronic services available ● Percentage of citizens that have visited government websites to search for information ● Number of businesses that have made payment online
Impact indicators	<ul style="list-style-type: none"> ● Reduction of waiting time at government counter ● Decrease in case processing time at government organisation ● Citizen/ business satisfaction levels concerning e-government
Readiness indicators	<ul style="list-style-type: none"> ● ICT penetration rates ● ICT infrastructure ● ICT literacy

These indicators, typically, give little insight into the value of e-governance for social and economic development. Such insight is usually revealed through in-depth case studies or grounded theory research. Some pertinent examples of progress in e-governance in developing countries, as this relates to social and local economic development, are:

- (a) The Bhoomi (land) project involves the computerization of land records for farmers, serving 700 000 farmers across more than 170 kiosks across the state of Karnataka, India. This is a suitable project selection as it supports local economic development and has impact on large numbers of producers and their households. “Karnataka’s Bhoomi represents an innovative approach ... providing transparency as well as easy and quick access to land records, with an added advantage of security and reliability to the farmers”²¹

²¹ National Planning Commission (2002). Successful Governance Initiatives and Best Practices: Experiences from Indian States. New Delhi: Government of India & United Nations Development Programme.





(b) A key focus of e-governance in Cairo, Egypt, is the computerization of the application and granting of building permits. This is an appropriate choice for Cairo, as it is a city of 19 million plus inhabitants, of which 17 million live in the city. The rate of urbanization is very high, thus residential buildings are in demand. The capacity to efficiently manage building permits through an ICT-enabled process means that citizens do not experience significant delays in getting formal housing. Builders and construction companies can build at a rapid pace, thus fuelling the local economy. However, caution should be raised in relation to this example, as the ecological development of the city does not appear to have kept pace with the physical infrastructure development, resulting in a cement landscape with potential long-term negative effects for environment and people.²²

The lesson from these and other e-governance projects appears to be that (a) municipalities should select one or a limited number of services around which to build the first e-governance layers, preferably an area which has a high impact on a large number of citizens and can be managed through public access centres; (b) that municipalities should develop and learn from these early projects, (c) only later increasing the volume of e-governance projects, and (d) building the access and connectivity layers for excluded households and small businesses accordingly. The current study is not an in-depth study of particular cases, but rather an overview of the state of development in a selection of municipalities and applications in provincial government, from which some ideas for strategy can be drawn.

STUDY DESIGN

For the purposes of this study, e-governance is defined as the use and impact of ICT in governance systems. It involves new channels for accessing government, new styles of leadership, new methods of transacting and new systems for organizing and delivering information and services. The focus is primarily on processes and interactions. Social Development is defined as maximizing the capacity of the individual, the family or household and the community to participate productively in society, both socially and economically.²³

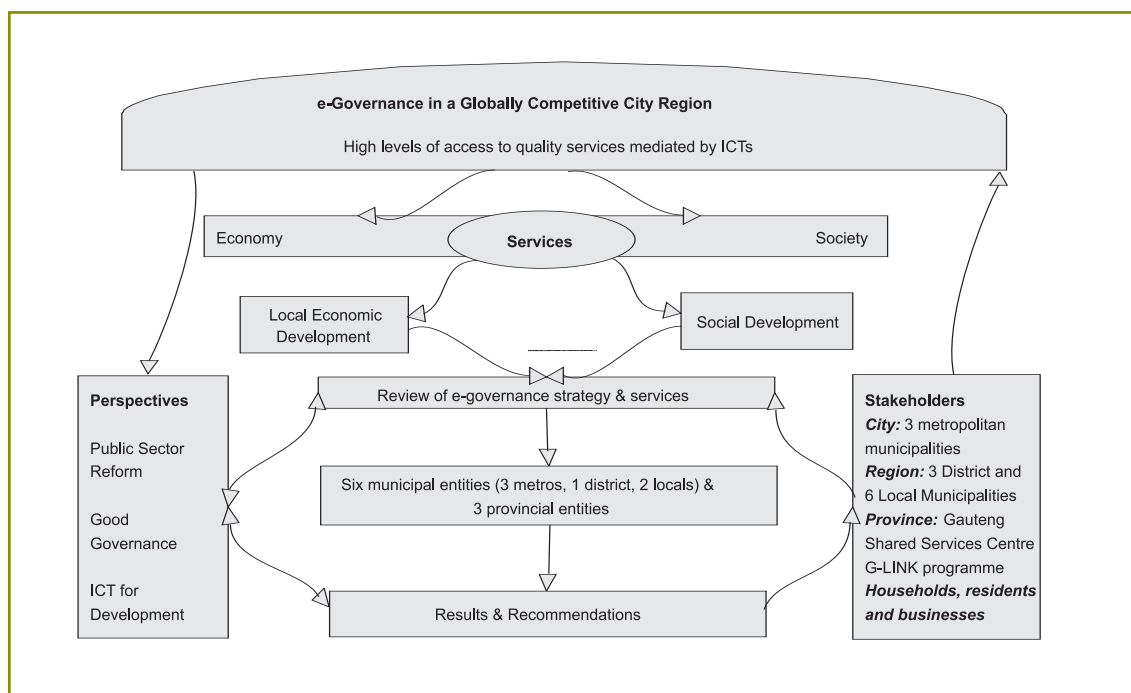
Local Economic Development is defined as facilitating a conducive environment and establishing economic projects and programmes that ensure that the economy as a whole works better for all residents, fosters growth and accelerates employment.²⁴ It is envisaged that the evolution of e-governance requires the implementation of a wide range of non-technological actions including public sector reform, good governance and utilising ICT with an explicit development orientation. This conceptual design is presented in the diagram below:

²² Interview with Hatem Elkadi, Government Services Delivery Program Director, Ministry of State for Administrative Development; Cairo city observation, March 2007.

²³ Gauteng Provincial Government 2006. Gauteng Social Development Strategy, December 2006.

²⁴ City of Joburg: Joburg 2030; Ekurhuleni Metro Integrated Development Plan, Budget & Service Delivery Budget Implementation Plan 2007/8 – 2009/10.

CONCEPTUAL FRAMEWORK FOR E-GOVERNANCE FOR SOCIAL AND LOCAL ECONOMIC DEVELOPMENT:
A VIEW OF THE GAUTENG CITY-REGION



PROBLEM, OBJECTIVE AND SCOPE OF THE STUDY

The problem under study is the strengths and weaknesses in the introduction of e-governance in Gauteng municipalities and how e-governance contributes to social and local economic development. A further dimension is whether the e-governance initiatives reviewed illustrate selected good governance characteristics namely strategic vision, responsiveness and transparency, as set out in the UNDP's nine good governance characteristics.²⁵

The purpose of the study was to assess the current state of e-governance in relation to social and local economic development and to make recommendations for the further evolution of e-governance initiatives to enhance the realisation of social and local economic development objectives, with due attention to characteristics of good governance. These recommendations are situated within the context of Gauteng as a 'globally competitive city-region', which addresses the need for increasing social and economic strength across historically advantaged and historically disadvantaged municipalities.

The scope of the study covers two spheres of government – the provincial and local sphere. The motivation for this, as argued by the local government officials who participated in the research, is that provincial government plays an important co-ordinating and resource supplementation role both in terms of strategy and infrastructure provision.

²⁵ UNDP Governance Policy, see <http://mirror.undp.org/magnet/policy/chapter1.htm#b>, available 03 July 2006.



Hence the institutions covered in the study are:

- Ekurhuleni, Joburg and Tshwane metros; Sedibeng District Municipality; Emfuleni Local Municipality, Mogale City Local Municipality [six entities selected from a total of 14 municipalities];
- Gauteng Shared Services Centre; Emergency Medical Services Call Centre, South African Police Services (10111) Call Centre [three entities selected from provincial government].

Interviews were held with key informants and two workshops were held with participants from provincial and local government.

The research questions being explored in this study are:

- a) What alignment currently exists between e-governance initiatives and social or local economic development objectives?
- b) How do these initiatives promote the selected good governance characteristics of strategic vision, responsiveness and transparency?

In answering these questions, the study has:

- Investigated what e-governance is taking place in these focus areas within the selected municipalities;
- Explored the approach to e-governance as a means to enable social and local economic development; and
- Assessed whether the initiatives promote the three selected principles of good governance.

The analysis uses the results-based management approach which identifies inputs, activities, outputs, outcomes and impacts. This study limits the review to inputs, activities and outputs, as the current phases of development of e-governance do not yet show significant results for outcomes and impact and no citizens or businesses were interviewed. For a more detailed discussion of the approach, see Annexure B.

LOCAL GOVERNMENT IN GAUTENG PROVINCE

The study is shaped by the context in which it takes place. Gauteng is the most economically productive and most densely populated province of the nine that constitute South Africa. The estimated population of Gauteng is between 9 and 10 million people, living in more than 3 500 households (estimates based on Census 2001 data). The 14 municipalities that operate within the province contend with high levels of inequality, expressed through joblessness and low levels of essential services to poor communities. Given that the Gauteng Provincial Government is oriented towards promoting Gauteng as a competitive 'global city region', it has to act to reduce the existing social inequalities in a region characterised by a combination of wealth and poverty.

In this complex environment, each municipality has its own character and profile, with different social and economic realities to manage. By way of example Ekurhuleni Metropolitan Municipality has a population of 2,1 million people, about a quarter of the total population for Gauteng; while Metsweding District Municipality has a population of 164 000 people or approximately 1.8% of Gauteng's population.²⁶ While they both share a rural landscape, Ekurhuleni has high levels of industrial activity dominated by

²⁶ Statistics South Africa, Census (2001); Development Bank of Southern Africa 2003. *Provincial Report on Gauteng*.

metals, machinery, chemicals and plastics, and Metsweding is largely agricultural with some limited tourism activity. The presence of globally integrated industries in Ekurhuleni attracts labour from across South Africa, leading to a high proportion of informal settlements which need to be serviced in terms of infrastructure and household services.

Each municipality formulates its own Growth and Development Strategy (GDS) to ensure a long-term vision, planning and budgeting framework for local development and to respond to local social and economic needs. These strategies are supported by five-year Integrated Development Plans (IDPs), which are reviewed on an annual basis and resources allocated accordingly. These GDS and IDP documents are required to identify social and local economic development objectives based on identified priorities, but this is not always the case.²⁶ Ekurhuleni's GDS, for example, identifies that its industries have underperformed under globalisation and that part of its turn-around strategy to stimulate the local economy is to invest in infrastructure that will enable all citizens and businesses of Ekurhuleni access to broadband services.

The following map shows the municipalities that comprise Gauteng.

Source: Courtesy of Adventure Zone: www.adventurezone.co.za/where_to_go/Province/Gauteng/3/



²⁶ Department of Local Government presentation 29 May, 2007.





The digital divide is as prevalent in Gauteng today as elsewhere in South Africa, with high levels of access to voice and data communications in the middle- to high-income range and very low levels of ICT access amongst the majority of the population, except for mobile communications using SMS messaging and “please call me”. This raises questions about the appropriate choices of technology for e-governance, including objective and subjective factors. Objective factors include the relatively low penetration levels of ICTs and the lack of affordability of using mobile phones and the Internet. Subjective factors refer mainly to the culture of acquiring the skills to use these tools and devices.

Community Survey results show that approximately half of households in Gauteng (49%) have access to a mobile phone, nearly double the number of households that have access to landlines (28.5%). These results would need to be disaggregated to a municipal level and further disaggregated to a community level to understand the trends in the penetration of ICTs, in order to design highly specific access and delivery strategies for e-governance, connectivity and digital inclusion. Nonetheless, this result demonstrates that a substantial number of households have the potential to retrieve information from or about the municipality through the Internet using either PCs via fixed-line connections or mobile phones, though current Internet penetration levels are generally low – ‘SA Internet access grows, but only for the haves’.²⁸ This is attributed to the cost of PCs, as well as the high cost of dial-up access charges and line rentals. Using mobile phone technology to access the Internet is beyond the reach of all but the richest households. Thus, in spite of the available infrastructure, the rate of Internet usage is constrained by the lack of affordability. If this information were disaggregated to a municipal level, it is possible that we would observe household access to the Internet as being above the national average in the three metros and very limited in the three districts. From this perspective, it should be asked how municipalities can reach their target audiences for social and local economic development through e-services?

While students at schools in Gauteng may be able to access the Internet through the Gauteng Online project, there is limited local content available that is specifically tailored to the educational and entertainment needs of the young people of Gauteng. Furthermore, upon leaving school, access to the Internet is significantly reduced. Many companies already disseminate information to specific audiences via mobile phones, given the greater access and usage of mobile phones amongst the majority of the population in all income groups across the municipalities in the province. The Ekurhuleni ‘Digital City’ strategy aims to provide broadband access to the home for all households. Broadband for all households, businesses and institutions in the province is also a current project of the Gauteng Shared Services Centre. However, both the projects are still in the conceptual and planning phases.

In summary, the potential of the governments of Gauteng to offer citizens and businesses an experience broadly similar to that of any global city (whether London or Mumbai) requires, inter alia, innovation in using ICT for improved access to social services and impact on local economic development, as well as in building and sustaining good governance. Social advancement cannot be achieved without, inter alia, establishing an explicit relationship between e-governance on the

²⁸ World Wide Worx (2008). *Internet Access in South Africa 2007*. Johannesburg.

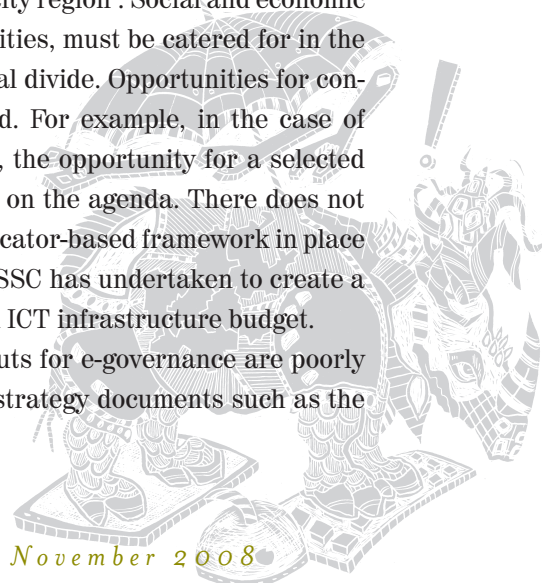
one hand and social or local economic development on the other hand. Furthermore, attempts at innovation in the use of ICT must take into account the need for greater social inclusion of poor communities and the cultural and economic factors that influence the use of technology and therefore the flow of communication.

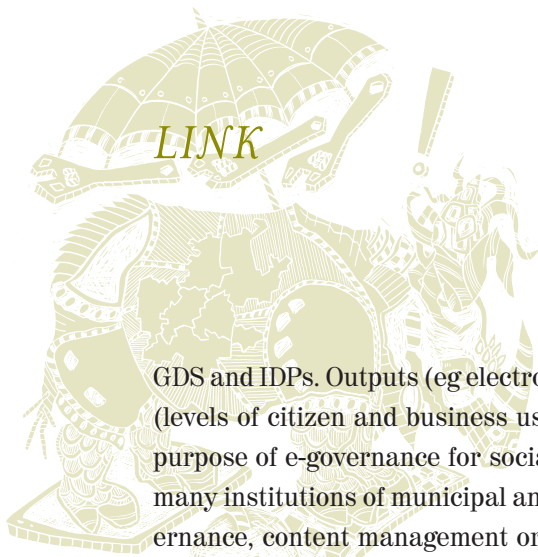
FINDINGS AND ANALYSIS ON E-GOVERNANCE FOR SOCIAL AND LOCAL ECONOMIC DEVELOPMENT

The information discussed here is for the period ending August 2008. Information analysed from the workshop, website review, document review and interviews show that, in the case of some metros and districts, social and local economic development objectives are clearly articulated but that this is not uniform with respect to all municipal functions. In other cases the objectives are not clearly articulated. In the case of the Ekurhuleni Metro, e-government strategic objectives and choices are understood by selected managers and are being operationalised, but these are not written up in the GDS and IDP or in the Digital Inclusion strategy. In Tshwane, the Smart City project has created significant infrastructure including fibre-optic cable and wireless infrastructure, but there is limited connectivity and usage because of the lack of content, content developers and content management in relation to the respective functions of the metro government.

The Gauteng Shared Services Centre's *e-Government Blueprint* addresses a range of policy, organisation and technology issues, but does not align e-government with social and LED objectives set out in GDS and IDP documents. The document does not take cognisance of the 'global city region' perspective, whereby provincial and local government would combine their respective resource planning, infrastructure and staff capabilities to create a 'globally resonant' e-government strategy that applies province wide. However, managers in the GSSC and in government departments are progressively working to situate their planning and activities in a digital inclusion frame. Information from metro and district governments regarding the G-Link programme which aims to build broadband connectivity for the Gauteng province, suggests that significant further discussion is needed to design a strategy that addresses the strengths and weaknesses of each metro, district and local municipality. This must be done, in order to guarantee affordable access and usage for households, local government services, SMEs and large businesses, thus facilitating their participation in building the envisaged 'globally competitive city region'. Social and economic inclusion of large groups from previously disadvantaged communities, must be catered for in the planning and budgeting exercises to ensure reduction of the digital divide. Opportunities for content development need to be more fully explored and facilitated. For example, in the case of Tshwane Metro which aims to connect 424 schools (Project 424), the opportunity for a selected group of teachers to be trained as content developers can be put on the agenda. There does not appear to be a results-based management framework or other indicator-based framework in place to assess e-governance in any of the municipalities, though the GSSC has undertaken to create a monitoring and evaluation framework applicable to the provincial ICT infrastructure budget.

The overall assessment of the study is that objectives or outputs for e-governance are poorly (vaguely) specified or not specified at all in government's major strategy documents such as the





GDS and IDPs. Outputs (eg electronic support services to tourism SMEs) and the desired outcomes (levels of citizen and business usage) are not specified in governments' plans, in relation to the purpose of e-governance for social or local economic development. This makes it difficult for the many institutions of municipal and provincial government to select relevant focus areas for e-governance, content management or human resources development, which need to be incorporated into business plans or master systems plans. The most explicit specifications are for infrastructure inputs, but the specifications for expected infrastructure outputs and impact are poorly stated. In the detailed report below, these weaknesses will become apparent.

Despite the identified weaknesses, some essential services are developing relatively sophisticated e-governance approaches, for example, mobile and Internet-enabled emergency services and the SA police services 10111 call centre. A brief insight into these operations is presented below.

MUNICIPAL WEBSITE REVIEW

As a tool for offering improved e-services or as a means of public consultation, municipalities need to assess the income levels of particular communities and their preferred sources of communication, whether face-to-face, mobile phones or Internet. Nevertheless, Web presence is an indicator of the level of development of e-governance, hence the relevance of web content needs to be checked, inter alia, (a) against the objectives for social and local economic development of municipal government and (b) against the characteristics for good governance.

The website review took the following three issues into consideration: the content, the functionality of each website and the phase of development. A review of the content explored whether there was adequate information on the website on the functions each municipality is legally obliged to fulfil that contributes to social and local economic development. The functionality was determined in terms of a range of factors including the interface, navigation, reliability and security. The website review guide is presented in Appendix B. The stage of development or maturity was measured against a five-phase model starting with information publishing, moving to basic interactivity, transactions and interactivity and culminating in a fifth stage of government innovation.

RESULT 1: INFORMATION ON SOCIAL AND LOCAL ECONOMIC DEVELOPMENT

The following is a list of municipal functions that contribute to social and local economic development. Each website was checked to establish whether it contained information on each of the following functions:

Social Development Oriented Functions									
Childcare facilities	Municipal Health Services	Free basic service: water	Free basic service: electricity	Free basic service: sanitation	Refuse removal	Local amenities	Sports Facilities	Municipal Parks & Recreation	Indigent Policy
Local Economic Development Oriented Functions									
Local Tourism	Municipal Transport	Public Transport	Trading regulations	Control of sale of alcohol	Control of sale of food	Markets	Street trading		

This exercise was straightforward for the metropolitan municipalities as they are expected to fulfil all of the above functions. It was more difficult for the district and local municipalities, as they share functions and it is necessary to establish how their functions are shared. Furthermore, there are functions that are delegated from provincial government and these need to be identified. The results showed that the websites for the metropolitan municipalities contained information on the majority of the functions, but this was not the case for the district and local municipalities. Two local municipalities had no website.

This process was taken further by narrowing the review to two functions – municipal health services (social development) and local tourism (local economic development) – and looking more closely at the content of the websites in each of these areas. With the exception of one site, the information on municipal health services was limited to databases of clinics and only a few sites supplied complete information. There appears to be no systematic way of presenting information on municipal health services.

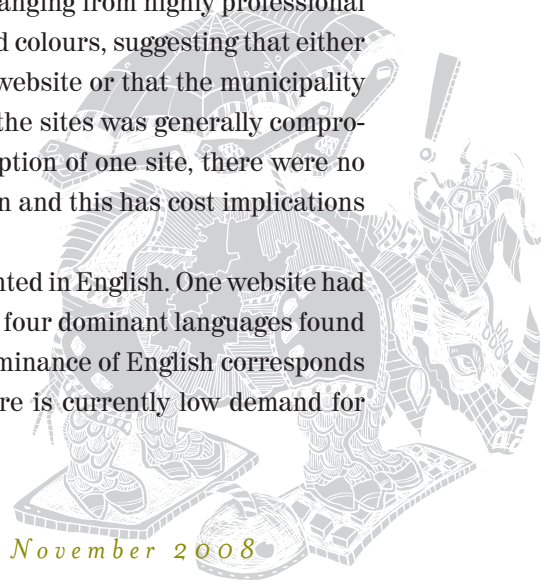
The content on local tourism also showed great variances. Information on local tourism can be targeted at tourists (local, national, international), and at emerging and established tourism operators. It is necessary to note that dedicated agencies such as the Gauteng Tourism Authority and South Africa Tourism operate to promote South Africa as a tourist destination. In this context, municipal websites can fulfil two additional functions in the promotion of local tourism. One value-add is to promote micro and small local tourism businesses that may not have coverage on commercial websites and another is to supply information/advice on how to start a business in the tourism industry. On one site a press release was available on the establishment of two township tourism authorities, but their contact details were not available. Only one of the 12 sites had information directed at this target group. As regards information on local tourism, three sites had comprehensive information, five had limited information and four had no information.

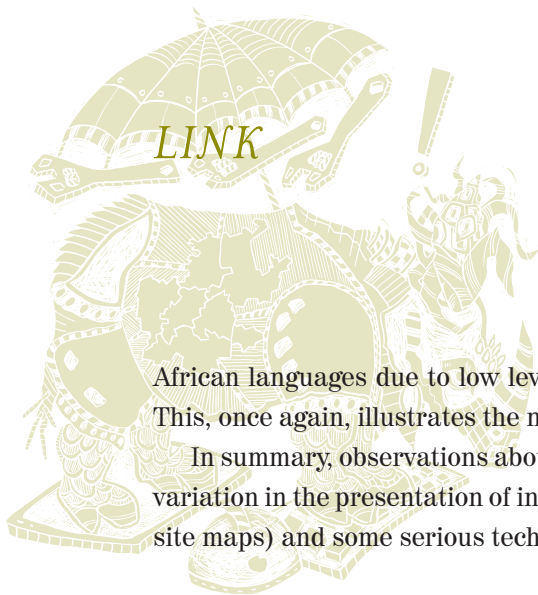
RESULT 2: FUNCTIONALITY OF WEBSITES

The functionality of the website is informed by its interface (the look and feel of the website), navigational abilities (logical structure, navigational necessities, search capability) and technical abilities (speed, security, system design, innovation). Reliability (stored customer profile, order process, customer service) is another important measure, but was not tested.

There was great variance in the look and feel of the websites ranging from highly professional to clumsy. Some websites showed inconsistent use of type fonts and colours, suggesting that either the municipality's corporate identity had not been applied to the website or that the municipality did not have a formalised corporate identity. The functionality of the sites was generally compromised by the lack of effective search functions and with the exception of one site, there were no site maps. The effect is that it takes a long time to find information and this has cost implications for residents and businesses who use dial-up access.

Language is another concern as information is generally presented in English. One website had a language policy advising that it would publish information in the four dominant languages found in the corresponding municipal area. It can be argued that the dominance of English corresponds with the main language of the current user groups and that there is currently low demand for





African languages due to low levels of Internet access in the majority of Gauteng's households. This, once again, illustrates the nature of the digital divide.

In summary, observations about the functionality of the sites concerned issues of language, the variation in the presentation of information, the lack of navigational necessities (search functions, site maps) and some serious technical errors (unable to load previous web pages).

RESULT 3: PHASES OF MATURITY

Most of the websites straddle Phase 1 (Information Publishing) and Phase 2 (Publishing and Basic Interactivity). Features of Phase 1 include the publishing of static content, public relations information and agency information. Features of Phase 2 include basic interaction via email. The metro sites, in particular, provide for interaction via email although the effectiveness is yet to be tested. One site was found to be in Phase 3 as it allows for online customer services and payments. The overall impression is that the level of maturity of the majority of websites is information publishing. The websites are evolving, but the extent of the evolution is influenced, as expected, by the take-up rate of the end-users.

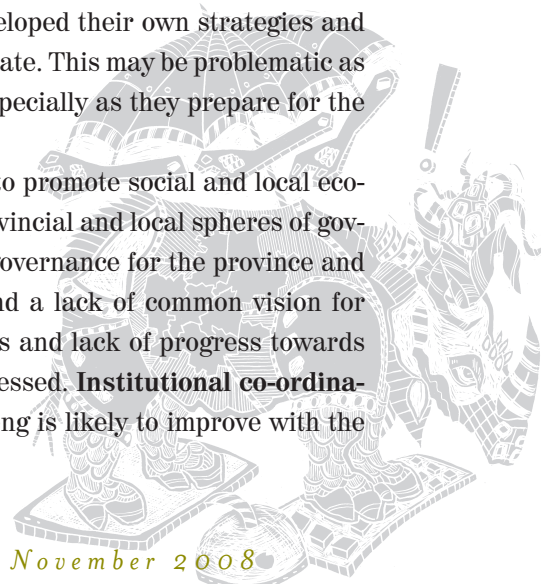
E-GOVERNANCE EMERGENCE IN THE GAUTENG PROVINCE

The national Department of Provincial and Local Government (DPLG) has acknowledged the importance of e-governance, but has not developed a guiding framework for local e-governance. Its provincial counterpart, which is tasked with providing institutional support to municipalities, does not currently assess municipalities against their e-governance capabilities or evaluate whether there is alignment between their development objectives and their ICT systems. Thus, e-governance has developed at a very slow pace. While there are some similarities, e-governance has evolved differently in each of the municipalities studied, as each has a unique set of challenges to contend with. The evolution of e-governance has not followed a logical path from formulation of strategy and common standards for interoperability and quality of service, to infrastructure and content development, this despite the province having the most sophisticated IT systems in the country. Hence, a number of strengths and weaknesses can be documented.

The announcement by the provincial government to invest in **infrastructure** (G-Link) and the formulation of the **e-government strategy** (*e-Government Blueprint*) heralded a massive connectivity programme and intentions to introduce e-services. However, the lack of detailed planning for e-governance projects raises the risk of misalignment between infrastructure spending and achieving development objectives. Furthermore, availability of relevant and up-to-date **content** has been an ongoing weakness. For example, the provincial government has struggled for a number of years to develop an effective education portal. On the other hand, the online application process for jobs in provincial government shows a general measure of success. Locating the G-Link project and the GautengOnline education portal in the Gauteng Shared Services Centre (GSSC) more recently, creates the opportunity to build synergy between the infrastructure and connectivity project (G-Link) and the e-government strategy, by bringing under one umbrella the supply-side issues of access networks, information and content provision.

In terms of the **G-Link infrastructure programme**, the provincial government plans to invest R93 million in the roll out of affordable broadband services for the province, a proposal that was announced in June 2007 by the MEC for Finance and Economic Affairs. The investment is an intervention by the provincial government designed to provide consolidated broadband coverage across the province and seeks to expand access to information and communication technologies to all the citizens of Gauteng. An apparent flaw in inter-governmental co-ordination is the manner in which it was developed, as it came after some of the municipalities developed their own strategies and consultation with the municipalities appears to have been inadequate. This may be problematic as municipalities are likely to execute their own individual plans, especially as they prepare for the international soccer event in 2010.

In terms of both infrastructure and content for e-governance to promote social and local economic development, the GSSC is a key role-player for both the provincial and local spheres of government. The main **challenges** to a co-ordinated approach to e-governance for the province and municipalities includes the lack of institutional co-ordination and a lack of common vision for provincial and local government, hence competition for resources and lack of progress towards maturing e-governance. Some of these challenges are being addressed. **Institutional co-ordination** and developing a **common vision** for e-governance in Gauteng is likely to improve with the





recently introduced interventions, including formation of a position of Chief Directorate: e-Government within GSSC; amendment of the constitution of the Chief Information Officers (CIO) Council to include CIOs of municipalities; and the expansion of the e-Government subcommittee to include municipalities. A lack of vision amongst operational staff is a further challenge and one that was persistently reported among the municipalities interviewed. It points to a general lack of capacity within the local government service and perhaps to a lack of understanding of the citizen centricity that municipalities espouse.

The *e-Government Blueprint* proposal has three main weaknesses: (a) it addresses social inclusion at too vague a level ie “development for all the citizens of Gauteng, particularly previously disadvantaged communities with a particular focus on the youth and women” – this could apply to any area of development and is not specific to e-governance; (b) it does not choose specific strategic objectives in either the sphere of social development or local economic development eg emergency services or local tourism, or any other selection and (c) it does not address the commitment to building a globally competitive city-region which requires measures for interaction, co-ordination and collaboration across the provincial government and local municipalities.

The provincial **Department of Local Government** engages with all 14 municipalities to ensure that the content of the Integrated Development Plans (IDPs) is aligned to legislative requirements and plans of national and provincial government, as well as to promote harmonisation across municipalities and across the three spheres of government. However, this does not currently apply to e-governance. Weaknesses were identified in strategic alignment across the three spheres of government which include a lack of integrated planning so that capital expenditure at each level can have a cumulative effect. The department has documented an overview of social and local economic development objectives across the province and this needs to inform e-governance strategy, including strategic vision, responsiveness and transparency.

E-GOVERNANCE IN METROPOLITAN MUNICIPALITIES

Gauteng has three metropolitan municipalities, namely City of Joburg, Ekurhuleni Metropolitan Municipality and City of Tshwane. Each has its own unique character and approach to e-governance. None of the three has a clearly articulated e-governance strategy, though elements of such a strategy exist in various other strategy and planning documents.

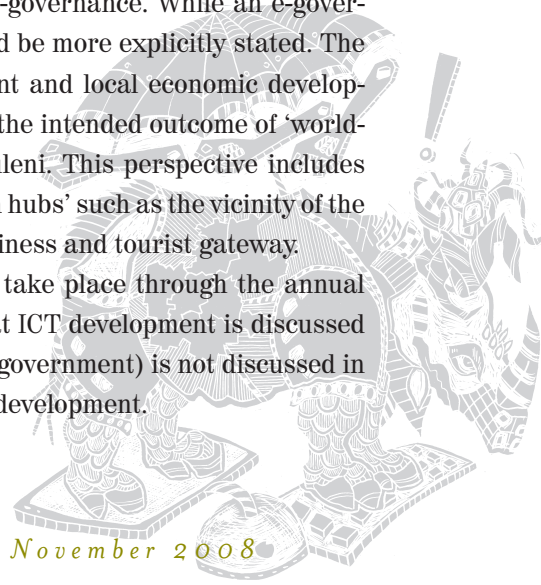
The **City of Johannesburg** has developed three related strategies, each of which can contribute to local e-governance for social and economic development. The three strategies are (a) a municipal broadband strategy; (b) a 2010 ICT strategy, based on the ICT requirements to host the FIFA World Cup 2010™ and incorporating a vision of the ICT legacy that will remain with the city and its people post the international soccer event; and (c) a ‘digital city’ strategy aimed at leveraging the 2010 ICT legacy for a range of purposes including e-governance support to small and medium enterprises. This latter strategy has not yet been approved by the Mayoral Council. Furthermore, the precise nature of the interconnectedness among the three strategies has yet to be defined. The work is at an evolutionary stage, with the key challenges for the municipal broadband strategy being the definition of a feasible business model that will attract private sector investment in infrastructure and offer affordable access. Similar explorations in the United States of America eg the city of Philadelphia and oth-

ers, have failed to produce a viable commercial business model, leading to the conclusion that municipal broadband projects will need to be publicly funded through municipal budgets and user fees. The CoJ is grappling with these complexities. The 2010 ICT strategy provides, inter alia, for the ICT requirements for a limited number of soccer venues, for a local transport system, and for tourism, marketing and communications. This creates an enabling ‘digital skin’, which can accommodate sophisticated levels of e-governance, once attention is given to the day to day services available in the city, not just the FIFA requirements. The ICT infrastructure for tourism, transport and sport, including networks and content, can contribute to local economic development, as they provide ease of access to information and ease of access to services, not previously available in the city. For example, the 2010 ICT strategy document promotes the tourism business objectives as follows “Inspire and mobilize citizens to contribute in areas such as tourism” and “Unlocking social and economic development opportunities”. These strategic measures can create the foundation for tourism information services offered by both the city government and citizens, which in turn promotes local economic development.

Ekurhuleni Metropolitan Municipality has probably most strongly articulated its vision of a digitally connected city, as one in which all citizens have access to affordable broadband services and ICT development is part of the “economic transformation and development” of the municipality. This strategic approach is set out in the Growth and Development Strategy 2025, the Integrated Development Plan, the EMM Digital City Blueprint and the Business Plan for the Implementation of Customer Care Centres. Furthermore, it recognises the contribution that a vibrant ICT sector will make to its manufacturing-oriented economy, which has been lagging in global terms. It also accepts that its role is to facilitate this process as it creates opportunities for the private sector to step in and provide the infrastructure and services. In terms of e-administration, Ekurhuleni has made great strides as it had to build a wireless network that connected nine administrative centres. It is now focusing on improving individual administrative processes (business process mapping) and aims to create a single view of its customers. While the municipality has no e-services, apart from a website that is weak in terms of social and local economic development information, it has a major project to build customer care centres throughout Ekurhuleni as a primary vehicle for e-services.

The *EMM Digital City Blueprint* illustrates extensive knowledge of and insight into the characteristics and future requirements of the local economy, local realities and inequalities, and aims to address the identified needs, including digital inclusion and e-governance. While an e-governance strategy is embedded in the *Digital City Strategy*, it could be more explicitly stated. The strategy sees the interconnectedness between social development and local economic development. The GDS 2025 agenda requires the application of ICT with the intended outcome of ‘world-class ICT infrastructure’ to support economic growth in Ekurhuleni. This perspective includes requirements for broadband infrastructure especially in ‘high-tech hubs’ such as the vicinity of the OR Tambo International Airport, South Africa’s international business and tourist gateway.

The implementation of this ICT for development agenda will take place through the annual IDPs. The main weakness in the IDP document reviewed, was that ICT development is discussed in relation to Infrastructure and Services, but e-governance (or e-government) is not discussed in relation to projects designed to enhance social or local economic development.





While noting the need for private sector partnerships, the EMM envisages the achievement of the digital city through what is known as the Full Public Control Model, which means that EMM would have direct involvement in all aspects of the project including the passive infrastructure, the active infrastructure and services. Ekurhuleni plans to create customer care areas and customer care centres as a mechanism to provide integrated services and information to communities, however, the ideas are general rather than specific.

The **City of Tshwane** has made perhaps the greatest advances from an infrastructure point of view with 470 km of fibre optic cable snaking around the city. Yet it has happened in a quiet and discrete manner and the potential to provide citizens with cheap broadband services has not materialized – it is akin to a road network without any vehicles driving on it. Tshwane plans to establish a Smart City office at the Innovation Hub and will focus initially on providing connectivity to a selection of facilities (424 schools, as well as hospitals and clinics). There is also the intention to escalate the current 260 termination points to 9000 and small businesses and home offices are set to benefit from this through free connectivity. Challenges for Tshwane include content development (once schools are connected), and the integration of the Smart City strategy and programme into key planning regimes (GDS, IDP) so that its many departments (emergency services, safety and security structures) can harness and build on the existing infrastructure. New initiatives identified include ‘e-enablement’, for example, through one integrated transaction processing system. Tshwane plans to implement at least 10 IT related initiatives that takes government closer to the people by 2011. In terms of e-administration, it was reported that the SAP system will ensure support for integrated planning, budgeting, delivery and performance management and individual and organisational performance monitoring must be fully integrated and supported by IT systems by 2009.

E-GOVERNANCE IN DISTRICT AND LOCAL MUNICIPALITIES

The local municipalities are at far earlier stages of e-governance than the metropolitan municipalities and are working to establish effective e-administration, having not yet embarked on e-services projects. e-services are currently less likely to be web-based and more likely to take the form of call centres and/or walk-in centres, since in the absence of affordable broadband connectivity, the majority of the local populations find it easier and cheaper to contact the municipalities telephonically or visit satellite offices.

Emfuleni Local Municipality respondents expressed the view that e-governance was very poor at their municipality, “we are nowhere near thinking about e-governance”. At the time of the interview, the municipality was still grappling with basic problems (such as low levels of IT competence among all officials, unlicensed computers). Emfuleni makes extensive use of information management and information systems and a number of applications are in place to enhance the administration of the municipality. Yet, a number of routine processes are still being performed manually. The Emfuleni IDP 2007-08 discusses the challenges and strategies for local economic development and the present limitations with regard to IT, but does not acknowledge the role of ICT as an enabler for local economic development. In order to promote good governance and institutional capacity building, projects listed include introducing an electronic Documentation Management System, e-mailing electronic statements to residents and linking all libraries and clinics

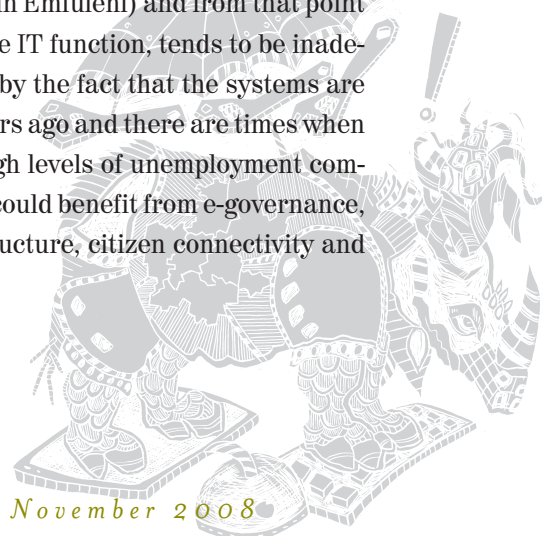
to the wide area network (two year period). Emfuleni expressed the desire for greater support from the district, provincial or national government in sharing resources that are commonly required by municipalities, described as an “online real-time repository that could reduce the time for reporting and facilitate access to policies”. The greatest challenge expressed was that IT is centralized at district level and this institutional arrangement is seen to affect Emfuleni’s ability to develop an e-governance strategy and systems.

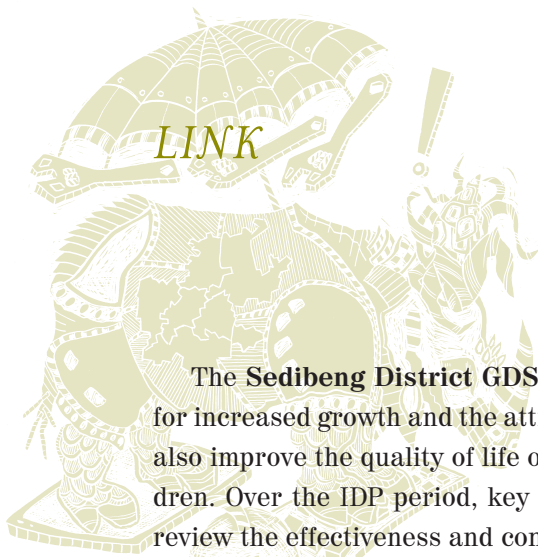
While it is reported that **Mogale City** aims to treat ICT in a more strategic way than has happened in the past, it is currently a diluted function buried in Corporate Services and mainly focuses on acquiring equipment and the maintenance of existing systems. As with Emfuleni, staff have low levels of IT competence and therefore interest, and the IT function is under-resourced. Apart from having a good website, the municipality has no e-services and at the time of the interview was planning to establish a call centre utilizing a toll-free number. Furthermore, e-administration is impaired as the network is incomplete. Each department makes use of its own IT systems and does not share electronic resources such as databases. An attempt to get the local and district municipalities to work in concert on ICT planning and investment did not result in a favourable outcome.

The Mogale City IDP 2005-2011 and the Master Systems Plan Investigation 2003 reveal a number of areas of concern: Provision is made for the implementation of a call centre for handling customer queries and for the establishment of multi-purpose community centres, but these measures do not specifically relate to fostering social or economic development. An MSP report refers to the e-Commerce Green Plan stating that the municipality should “start to position itself to be in a position where it will be able to render more services electronically”,²⁹ however neither connectivity for citizens nor digital inclusion are expressed as key development challenges, nor is ICT mentioned in relation to providing sustainable community services. While ICTs are seen as a means to ensure sound governance practices, the performance indicator relates to the Master Systems Plan (MSP) rather than to good governance. A number of IT projects are listed as priority LED projects, including an integrated land use management system and digitising of building plans, however there are no specific plans listed to improve ICT access and relevant content for citizens as part of the LED strategy.

In the instance of **Sedibeng District Municipality**, IT is a centralized function and the district employs three operations managers who are located in each of the three local municipalities that are incorporated in the district. They report to the district’s IT director. Emfuleni is the largest of the three municipalities (about four-fifths of the population reside in Emfuleni) and from that point of view, the type of support it receives from Sedibeng, including the IT function, tends to be inadequate. The rationale for treating IT as a shared service is diluted by the fact that the systems are not integrated, even though the process began more than three years ago and there are times when the shared drive cannot be accessed. In a municipal area with high levels of unemployment combined with poor skills levels, Sedibeng and its local municipalities could benefit from e-governance, but are hamstrung by the current low levels of municipal infrastructure, citizen connectivity and content development.

²⁹ Mogale City, MSP Management Report, 2003, p 37.





The **Sedibeng District GDS** identifies that improved ICT connectivity is a key ingredient for increased growth and the attraction of investors to the area. Improved ICT connectivity can also improve the quality of life of residents and facilitate learning and teaching of school children. Over the IDP period, key deliverables are to develop an ICT connectivity master plan; review the effectiveness and consider improvements to the deployment of CCTV cameras; and explore creating a centralised call centre service for all municipal services. Given the resource constraints referred to above, the question arises as to what the entry point might be for e-governance. As regards social development, the major area of need identified is emergency services. While emergency services will be migrated to become a provincial function by 2010 as discussed in the case study below, in the immediate future, a simple electronic information service could provide for greater efficiency and citizen benefit in the short term. As regards local economic development, it is noted that Sedibeng is a transport corridor situated on the southern border of Gauteng which the greatest number of heavy commercial vehicles pass through compared to other municipalities in Gauteng. Sedibeng thus has the potential to become a hub for e-governance by providing physical access to a range of e-services offered by municipal and provincial government, including motor vehicle licensing, thus attracting drivers and their companies to utilise this corridor for driver and vehicle licensing. ‘Capturing’ this audience through providing an attractive service, can create opportunities for the governments of Gauteng to piggyback on the licensing centres to provide long-distance workers with other e-services, such as health information, while on the road. The preparation of an e-governance strategy to promote social and local economic development, linked to the physical redesign of spaces utilised by long-distance vehicles, could inform the formulation of an ICT connectivity master plan, locating connectivity in key nodes first and then creating a district wide network over the longer term. The financing model for such initiatives may require a collaborative approach among municipalities and the provincial government.

TWO CASE STUDIES OF E-GOVERNANCE

Emergency medical services (EMS) and the SA Police Services at provincial level rely on ICT to effectively offer their services to the public and to respond to an emergency within the shortest possible timeframe. The SAPS call centre has been operational for a number of years. The EMS, which functions under the auspices of the provincial health department, was established in 2008.

GEMS CASE: GAUTENG EMERGENCY MEDICAL SERVICES

EMS is a core function in terms of social development objectives for community safety and security. Its functions are health-related (planned patient transport or PPT), accident-related and it services approximately 10 million citizens in terms of the Disaster Management Act 57, 2002. PPT services alone are in the region of 150 patients per day.

Historically, emergency medical services operated at the municipal level of government, but will be transferred to provincial government by 2010. By 2008, only Metsweding (district) services had been transferred to the provincial government. Even when the EMS responsibility has been

migrated, there will be a need to link to local government services, such as fire or local police or traffic services. The provincial and each local government has an EMS control centre. On the completion of the ‘provincialisation’ process, all calls will be routed to the Gauteng control centre, which uses the GEMS (Gauteng EMS) system to manage incoming calls and dispatch. It will communicate with local government where required through SMS, email and radio.

Call centre staff have undergone intensive training, including training on the GEMS system, listening skills and stress management. The dispatcher views two screens, one for incoming calls and dispatching and the other for tracking vehicles on GIS (Geographic Information System). Ambulances are fitted with tracking devices, so the vehicle movements can be seen on the GIS map by the dispatcher. In future, the ambulance attendant will log in to the control centre via a console in the vehicle and will be able to send and acknowledge receipt of calls electronically. The control centre is in contact with the SAPS operations centre, and often calls are referred from the SAPS due to greater public awareness of the 10111 (SAPS) emergency number, as compared to the 10177 national number for ambulance and fire services. It is common that in major incidents, local government EMS sends ambulance, fire and traffic management services. In the new arrangement, provincial traffic staff will also sit in the EMS control centre and have electronic access to traffic information in the system. It is possible to conduct data modelling based on historical data and to build scenarios for resource allocation. These capacities offer a high level of anticipation and preparedness for large events such as the FIFA World Cup 2010™.

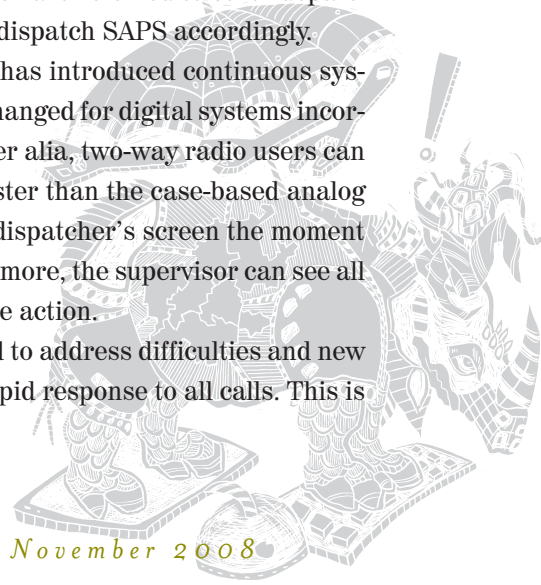
This computerisation initiative promotes good governance, in particular the factors of strategic vision, responsiveness and transparency. Responsiveness is achieved where the EMS can ensure rapid transport to the nearest appropriate hospital or hospitals for stabilisation or treatment. The electronic system has distinct advantages over radio and telephone, as the control centre can have accurate electronic information regarding the vehicle’s positioning and movements, while radio and telephone can present inaccurate information and positioning. Thus the electronic system ensures transparency of the EMS operation. The foresight evident in the detail of this initiative indicates strategic visioning and orientation.

10111 CASE: SAPS OPERATIONS CENTRE

The SAPS operations centre takes and screens calls related to police issues. It takes details and registers complaints including non-police related complaints, which are referred to other departments. The dispatchers analyse the priority of the complaint and dispatch SAPS accordingly.

The electronic operations centre was established in 2000 and has introduced continuous system upgrades. In the ensuing period analog technologies were exchanged for digital systems incorporating encryption technology. This minimises corruption as, inter alia, two-way radio users can no longer tap into information. The mobile data system is also faster than the case-based analog system – when a call is taken, information is sent through to the dispatcher’s screen the moment registration is complete. This has improved reaction time. Furthermore, the supervisor can see all complaints on screen simultaneously and can take the appropriate action.

The upgrading of the electronic systems was based on the need to address difficulties and new needs, to do whatever the old system couldn’t do and to ensure rapid response to all calls. This is





made possible through high bandwidth, enabling the processing of very high volumes of data. Radio, phones, vehicle tracking and GIS system are all integrated. For example, the bulletin board shows a number of important statistics, such as number of calls received in each area; number of calls in queue; number of calls lost and the caller's number; number of calls abandoned and caller identifier number. Municipal police departments are also involved and capture information on local traffic situations for referral.

There are a large number of call takers per shift, The electronic bulletin board therefore also shows busy agents, ready agents, call response (waiting) time, calls in queue, call handling time, calls incoming, calls answered and calls abandoned. Service levels must be above 97%. So the system keeps staff informed about their call response times, improving efficiency and responsiveness. The maximum required reaction time for an SAPS vehicle to respond to a dispatcher's call is five minutes and the SAPS vehicle reports via digital radio, phone or SMS.

In both these cases, GEMS and SAPS, the electronic system makes a difference, since, amongst other things, it improves capability and business intelligence, as information cannot be removed, the time and date of incidents is known, and this enables the agencies to bridge human limitations in terms of knowledge and archiving and to manage effectiveness of the operations. The e-systems facilitate co-ordination. Most of the services government renders requires collaboration. Hence, provincial departments and municipalities can learn from the emergency medical services (EMS) and SAPS 10111 strategy, system design and operations, regarding the establishment of e-governance approaches to social or local economic development.

FINDINGS ON STRATEGY, RESPONSIVENESS AND TRANSPARENCY

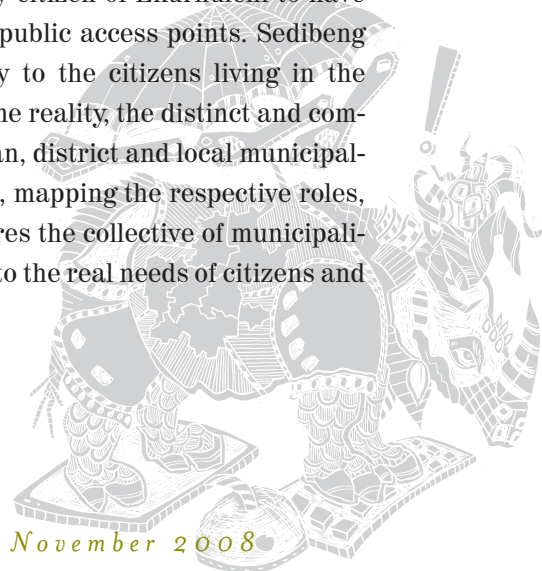
Typically, no dedicated e-governance unit or division exists within municipalities and initiatives are driven by Chief Information Officers (CIOs) in the larger municipalities while the smaller municipalities mostly do not have CIOs. This means that the emphasis tends to be on technology solutions, rather than on strategic vision, responsiveness, transparency or any other features of good governance.

UNCO-ORDINATED ACTION AND SPENDING

There are a wide range of e-governance projects and ICT infrastructure investment projects across the provincial and municipal governments. However, these projects and investments are not commonly known or organised across the governmental institutions of Gauteng. Each project has limited funding and other resources. Because the projects are typically small, the potential for significant impact on large numbers of citizens is lost. Opportunities to transfer lessons, to emulate projects or to share resources across the many institutions of government are not currently provided for in any of the inter-governmental arrangements. Introducing e-governance is a costly and risky exercise, and the risk is increased by working in isolation. Pitfalls include vendor lobbying, lack of (thorough) feasibility studies resulting in white elephants, poor contract management, low levels of staff capacity to use ICTs, a focus on tools rather than systems, and poor take-up rate by end-users due to inadequate computer literacy and/or lack of affordable access. These are some of the reasons why e-governance has not taken root or flourished, even in the metropolitan municipalities. The findings suggest that greater attention should be given to building strategic vision and responsiveness of e-governance projects across the provincial and municipal governments.

CONNECTEDNESS

While ICT infrastructure is seen to be a key element of any growth and development strategy, the many infrastructure plans that have been mooted since 2003 have not significantly increased government or citizen connectivity and usage. Ekurhuleni Metropolitan Municipality has plans to provide the infrastructure and services that will enable every citizen of Ekurhuleni to have Internet access whether it be from the home, the workplace or public access points. Sedibeng District Municipality has plans to provide limited connectivity to the citizens living in the urbanised parts of the district. However, for these plans to become reality, the distinct and complementary roles of the various actors (at provincial, metropolitan, district and local municipal level) in creating 'connectedness' needs to be clearly defined, mapping the respective roles, responsibilities and constraints. Building 'connectedness' requires the collective of municipalities and provincial government to increase their responsiveness to the real needs of citizens and businesses.





LINK

GLOBAL CITY REGION (GCR) PERSPECTIVE

Municipalities require support to harness e-governance for social and local economic development. This includes continuous research on best (and worst) practice, independent advice (from academics or experts rather than vendors) on e-governance in terms of the suitability of strategies, infrastructure, technology, systems, and other identified challenges. In the context of building a cohesive city-region, where employment is increasing and poverty is decreasing, the actors at local government level need advice on how to link up with or make use of other e-governance initiatives across the national, provincial and local spheres of government, in order to ensure the most efficient use of available human and financial resources and collectively advance the e-governance effort of municipalities. Particular gaps that e-government initiatives have yet to address include the provision of a comprehensive GIS system mapping the existing and evolving ICT infrastructure, building and dissemination of common and widely accessible datasets (social and economic development data), and integrating of national, provincial and local planning processes. Mapping ICT development and e-governance to the evolution of a 'global city-region' requires strategic vision supported by the relevant expertise for planning and implementation.

LEADERSHIP AND CO-ORDINATING ROLE OF DEPARTMENT OF LOCAL GOVERNMENT REQUIRES DEFINITION

If the provincial, metro, district and local municipalities are to collaborate in the task of building effective e-governance for social and local economic development, a co-ordinating entity will be required. This task can best be undertaken by the Department of Local Government, with technical advice and support from the Gauteng Shared Services Centre. This co-ordinating role is vital as it will include building relationships with an extended array of potential contributors including the G-Link broadband project. The department can also work with municipalities to design growth and development strategies (GDS) and integrated development plans (IDPs) that specifically address the contribution of e-governance to social and local economic development. A key objective of this leadership role should be to promote transparent government through the many opportunities presented by electronic media.

THEMES TO INFORM E-GOVERNANCE STRATEGY

Building on the findings of this study on e-governance at the municipal and provincial levels in Gauteng, a few propositions are offered for the design of municipal and provincial e-governance strategies. The following themes are important background elements to the strategy design.

LOCAL GOVERNMENT REFORM AND CITIZEN PARTICIPATION

There are two main dimensions to local government reform. The first is concerned with changes at the macro level in relation to integrated development planning, land use, and economic development and environmental impact. The second dimension relates to the provision of services and bulk infrastructure. At both levels, ongoing policy, strategic, institutional and operational reforms are needed to ensure that local government is able to address the changing demands of urban and rural populations.

These reforms are manifested in Integrated Development Plans and/or Growth and Development Strategies.

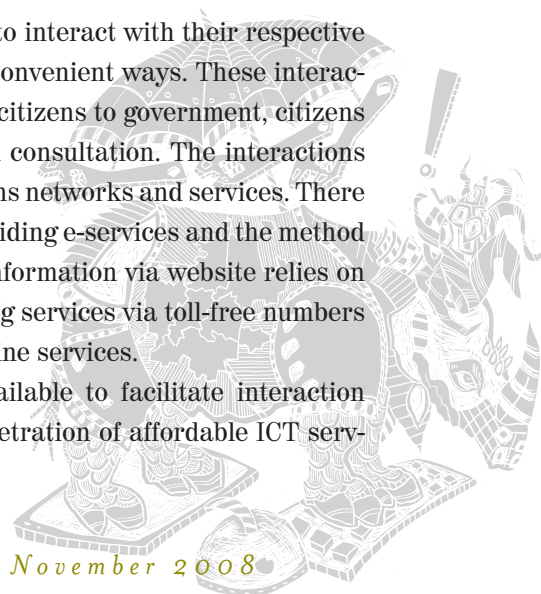
The White Paper enjoins municipalities to develop mechanisms to continuously engage with citizens, business and community groups at four levels: as voters; as citizens expressing their views publicly in relation to policy; as consumers and end-users entitled to quality services; and as organised partners involved in development. All of these forms of participation can be supported by e-governance and electronic media.

The majority of municipalities in South Africa are peri-urban or rural municipalities and their main challenges in the adequate provision of essential services are lack of funds and backlogs due to historical under-spending. It is important to take note of these two facts as they may underpin a widespread failure by municipalities to acknowledge information poverty as a form of poverty and the emphasis on the provision of essential services that typically excludes access to information and communication technologies (ICTs). The contribution of e-governance to addressing poverty and facilitating the acceleration of services requires strengthening. The perception that access to ICTs by the poor is a luxury rather than an essential set of services needs to be challenged. This is a necessary feature of future work in the arenas of public sector reform and good governance.

ICT, E-GOVERNANCE AND DEVELOPMENT

Local e-governance, is concerned with whether citizens are able to interact with their respective municipalities using ICT media and channels, in affordable and convenient ways. These interactions are varied and include information and services flows from citizens to government, citizens receiving important information by electronic means and citizen consultation. The interactions can be facilitated by affordable access to electronic communications networks and services. There needs to be an alignment between the technology medium for providing e-services and the method of communications access by users. For example, the supply of information via website relies on people having easy and affordable Internet access, while providing services via toll-free numbers over fixed line relies on people having access to affordable fixed line services.

This has implications for e-governance as the channels available to facilitate interaction between citizen and local government depend heavily on the penetration of affordable ICT serv-





ices. The majority of the municipalities in Gauteng have websites yet only a small percentage of the population have ready access to the internet. All of the municipalities can be contacted via fixed line numbers but most people, and certainly marginalized citizens, rely on mobile technology for regular communication and interaction. It is beyond an average citizen's affordability to contact municipalities via mobile phones and most people use their phones for text messages including the free "please call me" service. Therefore, in short, citizens are not yet able to interact with municipalities in an affordable and convenient way, due to a broad policy failure to achieve universal service and access in the country.

The promulgation of the Electronic Communications Act, 2006 had the potential to promote local e-governance by enabling district and local municipalities to apply for a class license to operate electronic communication networks for commercial purposes (ECA, 2006 Section 5 (5a)). This presents the opportunity for the metropolitan municipalities to develop municipal broadband plans, however, the major question is whether a commercial or non-commercial business model should be adopted. Within the study area of Gauteng, one district municipality is considering such plans and the three metros are at various stages of design or implementation of municipal broadband projects. However, there is no guarantee, even if the infrastructure is put in place, that these projects will necessarily achieve the social and economic objectives expected, in the absence of an e-governance strategy that makes the objectives of good governance, social and local economic development explicit.

OPPORTUNITIES AND CHALLENGES FOR LOCAL E-GOVERNANCE

The strategic vision of municipalities to offer broadband services to citizens provides a great opportunity for improving ICT penetration in South Africa and therefore the effective provision of e-services. Local government in Gauteng is taking on the role of facilitator in promoting ICT access, as it considers the benefits both in terms of improving the rate and quality of service delivery, and as regards the connectivity necessary for continued business development.

The main challenge is the design of an e-governance policy framework that applies to provincial and local governments collectively, detailing, inter alia, the actions required from each sphere of government. Smaller municipalities require basic ICT facilities and the support to move rapidly towards e-governance services, in order to reduce information poverty and foster time-saving and convenience for residents. Larger municipalities with a stronger tax base can benefit from measures to ensure inter-operability of government information and transaction systems, avoidance of duplication of efforts and achieving economies of scale. The logic of such an e-governance approach understands ICT infrastructure as having equivalent value to other essential services such as housing, water, sanitation, and roads.

With respect to the five-phase model of evolution of e-governance discussed above, an assessment of the municipalities surveyed illustrates the following:

- Web development requires greater attention to content management in all municipalities
- Web presence will have no value in poor communities as long as there is limited access to the internet, hence the need to develop a province-wide eAccess Strategy (more than just infrastructure) in order to promote access and affordability

- While the metros are relatively well advanced in formulating and implementing e-governance strategies, these do not necessarily align strongly to the social and local economic development priorities – in some cases they do, in other cases the linkage is poorly stated
- Districts and local municipalities generally lack an explicit strategy and are struggling to build e-administration, while the metros are able to concentrate on e-services
- Investments in ICT infrastructure requires partnerships with the private sector, but municipalities need to have identified their purpose and objectives and to employ effective partnership management skills in order to ensure that funds are well spent
- Linkages with the academic and broader research sector eg universities and science councils is necessary to provide advice on the strategic paths to follow, as well as the benefits or risks of particular technology choices
- Responsiveness of government services is not currently promoted through e-governance
- Transparency of government including public participation in decision-making is very limited, despite the opportunities offered by multi-media channels

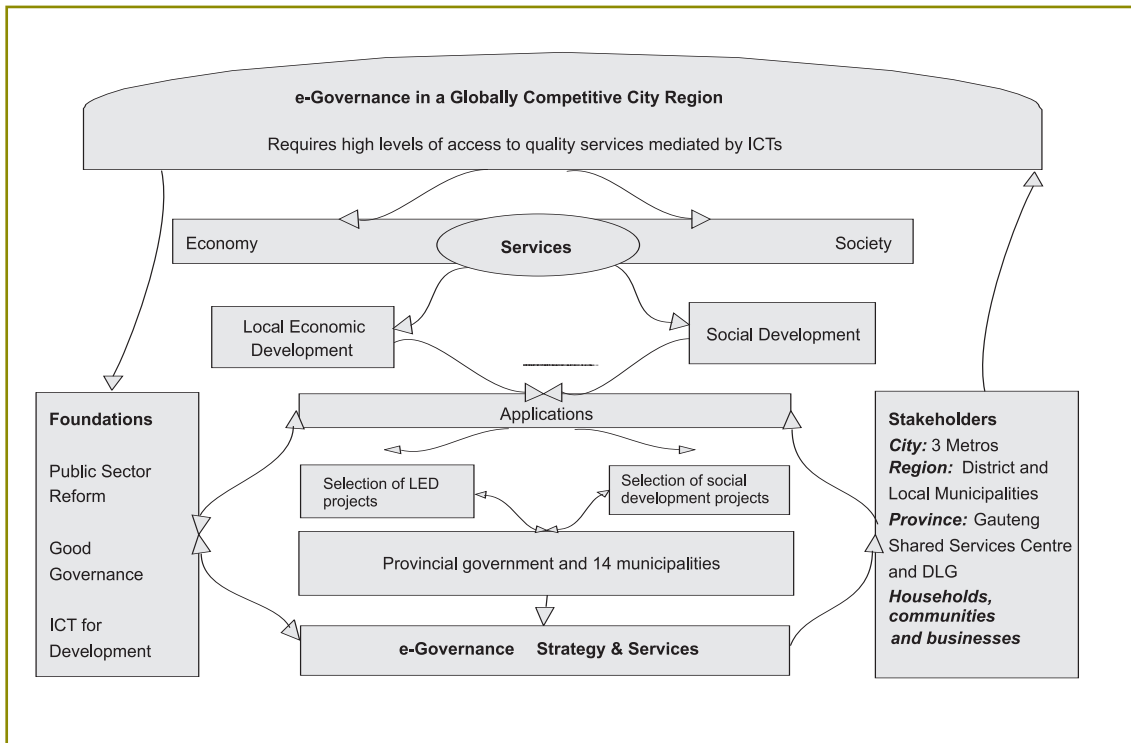


RECOMMENDATIONS:

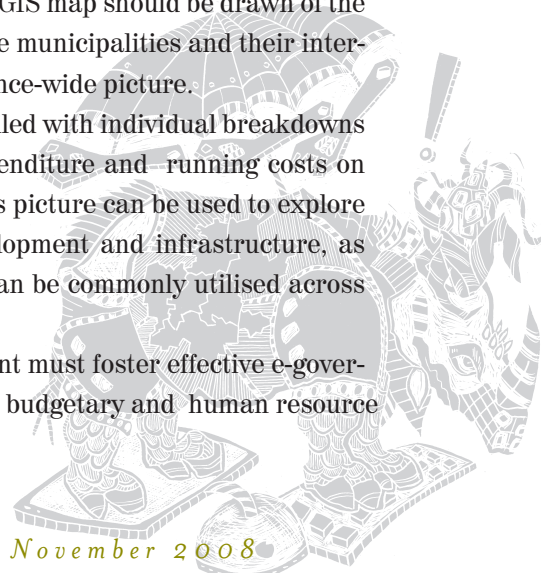
GAUTENG (CITY-REGION) EIGHT STRATEGIC INITIATIVES ON LOCAL E-GOVERNANCE FOR SOCIAL AND LOCAL ECONOMIC DEVELOPMENT

This section presents an outline for a set of eight strategic initiatives to promote local e-governance with the objective of social and local economic development. The diagram represents a perspective on how the pieces of building e-governance for social and local economic development fit together.

STRATEGIC FRAMEWORK: E-GOVERNANCE FOR SOCIAL AND LOCAL ECONOMIC DEVELOPMENT



- Strategic Initiative 1 An e-governance strategy for the provincial and municipal governments of Gauteng must identify the particular focus for e-governance for selected provincial departments and each of the municipalities, based on their respective social and LED priorities. These focal areas could, for example, be health and schools in Tshwane, emergency services and services for drivers of long-haul commercial vehicles in Sedibeng and local transport and tourism in Joburg. The choice should be based on a service or groups of services that would make a significant impact in the lives or on the livelihoods of a large percentage of the population living in the province or municipality. The choices should be limited to two or three manageable projects per municipality. To contribute to social and local economic development, future GDS and IDP documents should have explicitly stated social and LED objectives based on identified needs, and should include a chapter stating the priority e-governance projects that will be implemented as a means to achieving the objectives set.
- Strategic Initiative 2 The e-governance strategy should provide for an indicator-based e-governance monitoring and evaluation framework that will provide government with insights into the appropriateness of the choice and level of desired outputs and outcomes (or usage), the levels of readiness, the relevance and quality of inputs, and the short, medium and long-term impact of this particular area of strategic planning.
- Strategic Initiative 3 The e-governance strategy must provide for a structured Content Management System that goes beyond the Internet, including a collaborative system for the districts and their related local municipalities. Public servants, teachers and communities themselves can become content creators. Entities such as the GEMS and 10111 centres can provide valuable lessons for linking content and services.
- Strategic Initiative 4 The e-governance strategy should be underpinned by infrastructure access strategies, which could be “digital city” strategies combined with approaches such as G-Link, aimed at promoting broadband connectivity over a defined time period eg 10 years. A GIS map should be drawn of the infrastructure strategies of the respective municipalities and their inter-linkages, as well as the gaps in the province-wide picture.
- Strategic Initiative 5 A comprehensive budget should be compiled with individual breakdowns per municipality for current capital expenditure and running costs on ICT infrastructure for e-governance. This picture can be used to explore options for funding e-governance development and infrastructure, as well as e-governance applications that can be commonly utilised across municipalities
- Strategic Initiative 6 Provincial and each municipal government must foster effective e-governance implementation leading to project, budgetary and human resource





Strategic Initiative 7

Strategic Initiative 8

planning that meets the stated social and economic development objectives. If, as it may be expected, different governments choose different focal projects, this introduces opportunities for sharing lessons across the many institutions of government.

An independent, non-partisan advisory panel on e-governance should be constituted, that can be called upon as required to provide relevant strategic and technical expertise

The Gauteng Department of Local Government and the GSSC should facilitate regular and ongoing consultation and collaborative planning across the institutions of the provincial and municipal governments

LOCAL E-GOVERNANCE FOR SOCIAL AND LOCAL

ECONOMIC DEVELOPMENT: ADVICE FOR POLICY-MAKERS

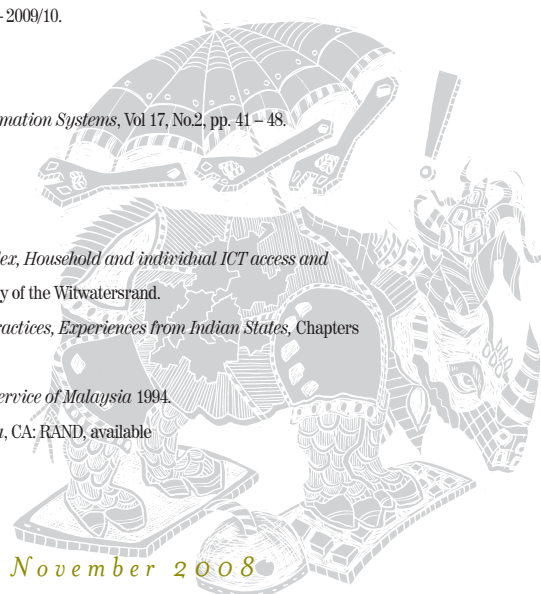
While the eight strategic initiatives listed above pertain in particular to the Gauteng province, they can be read as general recommendations applicable and relevant to local government in a variety of contexts. The main recommendation from the research study on local e-governance is that the local and provincial levels of government require a common strategy that places the purpose of e-governance as being social development and local economic development. Like other tools such as finance and human resources which serve to promote social and economic development, 'e-governance' or the utilisation of ICTs in the governance and development processes can be stimulated by a clear definition of priority projects that place these new technologies at the service of large segments of the population in ways that have a significant impact on the lives and livelihoods of the communities concerned.

Supporting recommendations are that:

- (a) While ICT infrastructure and connectivity are a necessary condition for e-governance, they are not a sufficient condition for e-governance to enable social and local economic development. Therefore, content development and infrastructure development strategies need to proceed in parallel, the one feeding the other, in order for people and communities to realise and experience the value of ICTs in their economic and social activities. Government information and government services must be made easily accessible in the online environment.
- (b) People and communities themselves can provide the content required for community information services, and for information services for the informal sector, in addition to government as information and content providers on public services. Unleashing the power of the technologies in this way can create 'social capital' and 'informational capital' currently only available to those segments of the population who can afford the relatively expensive mobile and Internet-based communications, and can place such social and informational capital in the hands of poor households and communities. □

REFERENCES

- Abrahams, L & Bhyat, M. (2007). *Designing Joburg's digital future: Leveraging the 2010 ICT Legacy*. LINK Centre, Johannesburg.
- Accenture (2004). *e-Government Leadership: High Performance, Maximum Value.*, Toronto: Accenture, available <http://www.accenture.com> 17 July 2006.
- Accenture (2005). *Leadership in Customer Service: New Expectations, New Experiences*. Toronto: Accenture, available <http://www.accenture.com> 17 July 2006.
- AGIMO (2005). *Australians' Use of and Satisfaction with e-Government Services*. Canberra: Australian Government Information Management Office.
- BAH (2002). *International e-Economy Benchmarking: The World's Most Effective Policies for the e-Economy*. London: Booz Allen Hamilton, available <http://www.itis.gov.se/publikationer/eng/ukreport.pdf> 18 July 2006.
- Baum, C and Di Maio, A. (2000). *Gartner's Four Phases of e-Government Model*. Gartner-Group.
- Bertelsmann Foundation (2002). *e-Government - Connecting Efficient Administration and Responsive Democracy*. Gütersloh: Bertelsmann Foundation, available <http://www.begix.de/en/studie/studie.pdf> 17 July 2006.
- Bridges.org (2005). *The Real Access/ Real Impact framework for improving the way that ICT is used in development*. Cape Town.
- Cappgemini (2005). *Online Availability Of Public Services: How Is Europe Progressing?*, Brussels: Cappgemini, available http://europa.eu.int/information_society/soccul/egov/egov_benchmarking_2005.pdf 28 June 2006.
- Carbo, T. & Williams, J.G. (2004). Models and metrics for evaluating local electronic government systems and services, *Electronic Journal of e-Government*, 2(2), pp. 95-104.
- Centre for Public Service Innovation, (2003). *Citizen Access to e-Government Services. Report by Mohlaleng Strategy Consultants*, Wits LINK Centre and Sangonet for the CPSI, Pretoria.
- City of Joburg (2004). Joburg 2030, available <http://www.joburg.org.za/content/view/123/58/1/1/> 17 November 2007.
- City of Tshwane, February (2007). *Tshwane spatial Development strategy 2010 and Beyond*, Tshwane.
- City of Tshwane, September (2004). *Tshwane City Strategy Final Report*, Tshwane.
- City of Tshwane, June (2004). *Tshwane Global Digital Hub Scoping Reports*, Tshwane.
- Clement, A. and Shade, L. (1998). *The Access Rainbow: Conceptualising Universal Access to Information/Communication Infrastructure*. Working Paper No. 10. Toronto: Information Policy Research Program, Faculty of Information Studies, University of Toronto.
- Deloitte (2004). *Citizen Advantage: Enhancing Economic Competitiveness through e-Government*. New York: Deloitte, available <http://www.deloitte.com> 17 July 2006.
- Development Bank of Southern Africa (2003). *DBSA Provincial Report on Gauteng 2003*.
- Dutta, S., Lopez-Claros, A., and Mia, I (2006). *The Global Information Technology Report 2005 – 2006, Leveraging ICT for Development*, Insead & World Economic Forum, Hampshire and New York: palgrave Macmillan.
- e-Government Economics Project (2006a). *Compendium to the Measurement Framework*. Brussels: eGEP, European Commission, available http://217.59.60.50/eGEP/Static/Contents/final/Measurement_Framework%20Compendium.pdf 24 July 2006.
- e-Government Economics Project (2006b). *Measurement Framework Final Version*. Brussels: eGEP, European Commission, available http://217.59.60.50/eGEP/Static/Contents/final/D.2.4_Measurement_Framework_final_version.pdf 3 July 2006.
- Ekurhuleni Metropolitan Municipality (2007). *Ekurhuleni Growth and Development Strategy 2025*.
- Ekurhuleni Metro Integrated Development Plan, Budget & Service Delivery Budget Implementation Plan 2007/8 – 2009/10.
- Ekurhuleni Metropolitan Municipality, no date. *Digital City Blueprint*.
- Emfuleni Local Municipality, 2007-2008. *Emfuleni IDP*.
- Flak, L.S., Olsen, D.H. and Wolcott, P. (2005). "Local e-Government in Norway", *Scandinavian Journal of Information Systems*, Vol 17, No.2, pp. 41 – 48.
- Gauteng Provincial Government (2007a). *e-Government Blueprint Proposal*, 23 March 2007.
- Gauteng Provincial Government (2007b). *Building Gauteng as a Globally Competitive City Region*.
- Gauteng Provincial Government (2006). *Gauteng Social Development Strategy 2006 – 2014*.
- Gillwald, A., Esselaar, S., Burton, P. and Stavrou, A. (2005). South Africa (chapter) in *Towards an African e-Index, Household and individual ICT access and usage across 10 African countries*, Gillwald (ed.) Johannesburg: Research ICTAfrica, LINK Centre, University of the Witwatersrand.
- Government of India, Planning Commission, and UNDP. (2002). *Successful Governance Initiatives and Best Practices, Experiences from Indian States*, Chapters 19 and 20, pp. 172 – 187.
- Government of Malaysia (1995). *The Civil Service of Malaysia, Improvements and Development in the Civil Service of Malaysia 1994*.
- Graafland-Essers, I. & Ettetdgui, E. (2003) *Benchmarking e-Government in Europe and the US*. Santa Monica, CA: RAND, available



http://www.rand.org/pubs/monograph_reports/MR1733/MR1733.pdf 19 July 2006.

Heath, A. April (2007). *Sedibeng IDP and Budget Lekgotla*, Drakensburg, Sedibeng, (CD).

Hood, C. (1983). *The Tools of Government*, London: Macmillan.

Human Sciences Research Council (2005). *Poverty Pockets in Gauteng: How Migration Impacts Poverty*. Pretoria: Urban Rural and Economic Development, HSRC.

Intergovernmental Advisory Board (2003). *High Payoff in Electronic Government: Measuring the Return on e-Government Investments*. Washington, DC: IAB, available <http://www.gsa.gov> 24 June 2006.

Janssen, D. (2003). Mine's bigger than yours: assessing international e-Government benchmarking, in: *3rd European Conference on e-Government*, F. Bannister & D. Remenyi (eds.), Reading, UK: MCIL, pp 209-218.

Janssen, D., Rothier, S. & Snijkers, K. (2004). If you measure it they will score: an assessment of international e-Government benchmarking. *Information Polity*, 9(3/4), pp 121-130.

Layne, KJL and Lee, J. (2001). Developing fully functional e-Government: A four stage model", *Government Information Quarterly*, Vol 18 No 2, pp 122 – 136.

Minges, M. 2005. *Evaluation of e-Readiness Indices in Latin America and the Caribbean*. Santiago: ECLAC, available

<http://www.eclac.org/socinfo/publicaciones/default.asp?idioma=IN> 18 July 2006.

Mogale City 2007. *Integrated development plan 2007- 2011*. Mogale City:

Moon, M.J. (2002). The Evolution of e-Government Among Municipalities: Rhetoric or Reality? *Public Administration Review*, Vol. 62 No 4, pp 424 -433.

National Planning Commission 2002. *Successful Governance Initiatives and Best Practices: Experiences from Indian States*. New Delhi: Government of India & United Nations Development Programme.

Nicoll, P., Robinson, J. & O'Hanlon, B. (2004). *Measuring the Efficiency and Effectiveness of eGovernment*. Canberra: Auditor-General, available

http://www.anao.gov.au/WebSite.nsf/Publications/2C3CDF64278872A9CA256FA2007F445E_24 June 2006.

NCM (2003). *ICT Usage in the Public Sector: A Nordic Model Questionnaire*. Copenhagen: Nordic Council of Ministers, Statistics Denmark, available

<http://www.dst.dk/upload/ictusagepublic.pdf> 4 July 2006.

NOIE (2003). *e-Government Benefits Study*. Canberra: National Office for the Information Economy, available

http://www.agimo.gov.au/_data/assets/file/16032/benefits.pdf 22 June 2006.

Osborne, D & Gaebler, T. (1992). *Reinventing Government: How the entrepreneurial spirit is transforming the public sector*. New York: Plume Books.

Statistics South Africa (2001). *Census 2001*.

Statistics South Africa (2007). *Community Survey 2007: Municipal Data on Household Services*. Pretoria: StatsSA.

United Nations (2004). *Global e-Government Readiness Report: Towards Access for Opportunity*. United Nations, New York:

UNDP ICT for Development Observatory, available <http://sdnhq.undp.org/observatory/> 21 November 2008.

United Nations Development Programme. 'Governance for Sustainable Human Development: A Policy Document', available

<http://mirror.undp.org/magnet/policy/default.htm> 03 July 2006.

United Nations ICT Task Force (2005). *Information and Communication Technologies and the Millennium Development Goals*, UN ICT Task Force, New York.

UN Millennium Project (2005). *Innovation: Applying Knowledge in Development*. UN Task Force on Science, Technology, and Innovation, New York.

World Wide Worx (2008). *Internet Access in South Africa 2007*. Johannesburg.

APPENDIX A: RESEARCH FRAMEWORK AND METHODS

Note to Reader:

The study is informed by the following areas of theory, namely perspectives on globally competitive city-regions, ICTs for Development (ICTs4D), public sector reform and good governance. This theoretical framework is applied to the Gauteng ‘city-region’ through exploring e-governance in Local Economic Development (LED) and Social Development (SD), measured in terms of strategic vision, responsiveness and transparency.

The two research questions being explored in this study are:

- a) What alignment currently exists between e-governance initiatives and social and local economic development objectives?
- b) How do these initiatives promote the selected good governance characteristics of strategic vision, responsiveness and transparency?

In answering these questions, the study has:

- Explored the approach to e-governance as a means to enable social and local economic development;
- Investigated what e-governance is taking place in these focus areas within the selected municipalities;
- Discussed how these e-governance initiatives are contributing to the particular municipalities social or local economic development objectives; and
- Assessed whether the initiatives promote the three selected principles of good governance.

Social Development is defined as maximizing the capacity of the individual, the family or household and the community to participate productively in society, both socially and economically (Gauteng Social Development Strategy 2006).

Local Economic Development is defined as facilitating a conducive environment and establishing economic projects and programmes that ensure that the economy as a whole works better for all residents, fosters growth and accelerates employment (City of Joburg 2030; Ekurhuleni IDP, Budget & SDBIP).



The following table provides definitions of each of the three good governance characteristics:

	Definitions	Indicators SD	Indicators LED
Strategic vision	<p>“Leaders and the public have a broad and long-term perspective on good governance and human development, along with a sense of what is needed for such development. There is also an understanding of the historical, cultural and social complexities in which that perspective is grounded”</p> <p>(UNDP Governance Policy Paper)</p>	<ul style="list-style-type: none"> • e-Gov Strategy exists • Social development priorities clearly articulated (GDS/IDP) • e-Gov Strategy is explicitly aligned to these social development priorities • e-Gov Strategy is being implemented through application of human capital and budgets 	<ul style="list-style-type: none"> • e-Gov Strategy exists • Local economic development priorities clearly articulated (GDS/IDP) • e-Gov Strategy is explicitly aligned to these local economic development priorities • e-Gov Strategy is being implemented through application of human capital and budgets
Responsiveness	<p>“Institutions and process try to serve all stakeholders” (UNDP)</p>	<ul style="list-style-type: none"> • Social development needs of households are clearly articulated (GDS/IDP) • e-Gov strategy explicitly responds to these needs • e-Gov operations explicitly responds to these needs 	<ul style="list-style-type: none"> • Local economic development needs of economic sectors are clearly articulated (GDS/IDP) • e-Gov strategy explicitly responds to these needs • e-Gov operations explicitly responds to these needs
Transparency	<p>“Transparency is built on the free flow of information. Processes, institutions and information are directly accessible to those concerned with them, and enough information is provided to understand and monitor them.” (UNDP)</p>	<ul style="list-style-type: none"> • e-Gov strategy explicitly builds in requirement for public access to information on social development priorities • e-Gov project design incorporates a structured content management system • e-Gov strategy provides for connectivity and digital inclusion 	<ul style="list-style-type: none"> • e-Gov strategy explicitly builds in requirement for firms and SME access to information on local economic development priorities • e-Gov project design incorporates a structured content management system • e-Gov strategy provides for connectivity and digital inclusion

The **methodological approach** used in this study is strategy formulation. Hence it (a) investigates the views and voices of government employees engaged in building e-governance, (b) compares these views to what is stated in key documents, (c) presents a gap analysis and (d) offers recommendations for strategy design. The **methods** to collect the data for analysis included the following:

- A desk review of relevant South African documents, including the provincial e-Government Blueprint, the Ekurhuleni “Digital City Strategy”, municipal GDS/IDP documents, the Electronic Communications Act;
- A website review of all 14 municipalities to construct an overview of the institutions being studied;
- A first workshop with presentations from municipalities to share insights on e-governance in selected municipalities. The workshop employed the technique of appreciative enquiry, with participants reporting on achievements to date, as well as raising issues and challenges for the future;

- Semi-structured interviews, building on the information obtained at the workshop, to identify lessons from and challenges to building local e-governance and clarify issues identified in the desk and website reviews;
- A second consultative workshop at which the findings, analysis and draft strategy outline (roadmap) were presented for feedback and comment.

The data analysis method is based on the results based management approach which identifies inputs, activities, outputs, outcomes and impacts. This study limits the review to inputs, activities and outputs, as the current phases of development of e-governance do not yet show significant results for outcomes and impact and no citizens or businesses were interviewed. The distinction between outputs and outcomes is perceived as:

Outputs

- Are describable or measurable changes produced by activities (or ‘deliverables’)
- What are the immediate results in terms of products and services, provided to intermediary organizations or direct beneficiaries?
- Are these outputs immediate, visible, concrete & tangible?

Output indicators

- List and discuss the most important immediate results of the project in terms of what benefits are available from e-services that were not available with counter-only services

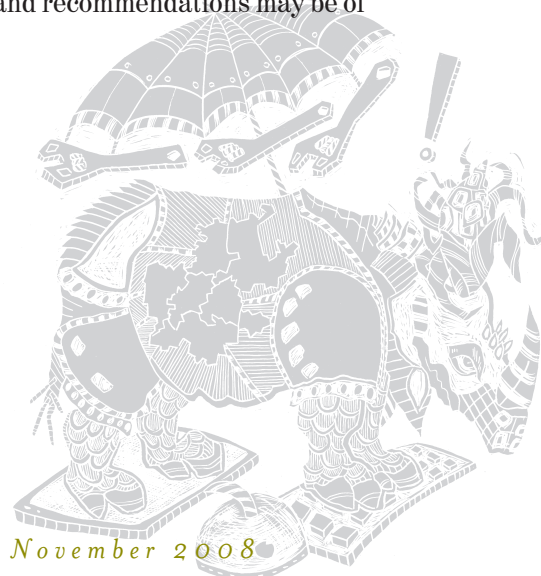
Outcomes

- Refer to end-of-project/program results on beneficiaries
- Results in the medium term

Outcome indicators

- List and discuss the relatively direct and medium term effects (on beneficiaries) of the programme/project outputs
- Consider the question: “How will we know success when we see it?”

The main **research output** is a generic framework for an e-governance strategy which aims at the promotion of social and local economic development. This is envisaged as a tool that can be used at provincial and local level government level in the Gauteng Province and in South African municipalities more broadly. Particular findings, analysis and recommendations may be of interest to local government in African countries.



APPENDIX B: WEBSITE REVIEW GUIDE

Note to Reader: This review guide may be used to improve the performance and quality of your organisation's website.

1 Content

1.1 Product / service related information

- Is there information on all the municipality's functions?
- Does it give you most or all of this information?
- Is there information on (a) the municipality's services? (b) how to access these services?

1.2 Agency and contact information

- Does it give you contact information?
- Does it give information on who to speak or write to on particular issues?
- Are emergency numbers clearly displayed?

1.3 Information quality

- Is it up to date?
- Is it well written?
- Is it easy to understand?
- Is it relevant?

1.4 Interactivity

- Are there any functions that allow the reader to interact with content?
- Are there options to use the website in more than one language?

2 Interface

2.1 Graphic design principles

- Is the look and feel of the website in line with the corporate identity of the municipality?
- Is the look and feel of the website aligning with the expected target audiences?
- Is the layout of the website easy on the eye in terms of background colour, font type, size and colour?

2.2 Graphics and multimedia

- Does the website make use of images?
- Do these images complement the text?
- Do these images affect the loading time of a website or a webpage?
- Does the website make use of audiovisual tools?
- Are these relatively fast to load?
- Do these tools enhance or detract from the value of the website?

2.3 Style and Text

- Is the style of writing appropriate for the intended target audiences?
- Does the presentation of the text sustain one's interest?
- Is the text dense?
- Does one have to keep scrolling down to read information?
- Has the text been broken up into chunks with clear, bold headings;

- Is information presented with headings (ToCs) which allow one to move to particular parts of a web page (the object is to give users the choice as to whether or not they want to read the information?)

2.4 Printing

- Is there a print page option?
- Can you print with ease?
- Does it print within a normal A4 page with standard margins or does it run off the page?

3 Navigation

3.1 Logical structure

- Is all the information easy to access? Do you have to have to click the mouse more than three times to access information required?
- Is it evident from the navigational buttons and submenus, what the broad areas of the website are and which specific topics are covered by each broad area?
- Is the website intuitive? Does it take you a long time to orientate yourself around the website?
- Do you have to rely on the forward and backward buttons on the browser or are there links to each page at every stage? Do you find yourself losing track?

3.2 Navigational Necessities

- Does it have navigation buttons?
- Are these visible?
- Is it clear what is meant by each navigation button?
- Do the navigation buttons stay static in a frame or do they disappear when one scrolls down a web page?
- Are there submenus?
- Does the website have a site map or help guide? Are these useful?
- Is there a call centre or helpline to provide verbal assistance?

3.3 Searches

- Does the website have a search facility?
- Does it get you to the relevant information?
- Does it give users hints and tips about how to conduct a search?

4 Reliability

4.1 Stored customer profile

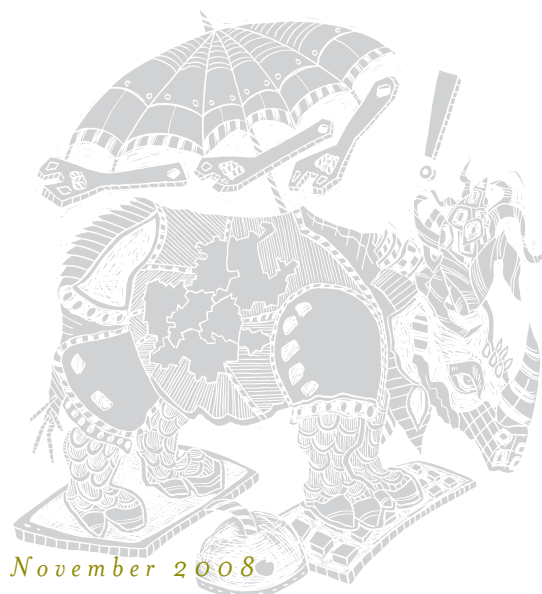
- Does it maintain transaction history?
- Does it track transactions?

4.2 Order process

- What type of transactions can be done on the site?
- Does it interact with any other systems?
- Does it provide for other business transactioning?

4.3 Customer service

- Can you log customer service calls?
- Are there any contact details?
- Are the service delivery processes outlined?





5 Technical

5.1 Speed

- If one were using dial-up, would it take a long time to download a website or a particular page or PDF?
- Does it take long to go in to a page?
- How long does it take to go to other pages?

5.2 Security

- Can you enter personal details?
- Does the page cut out after a period of time when transacting is taking too long?
- Are there any warning messages?

5.3 System design

- Does it work on standard Internet explorer?
- Does it require any additional system changes to work?
- Does it require specific hardware updates to work?

5.4 Innovation

- Is there anything unique or innovative on this website that you have not seen on any of the other municipal websites?

APPENDIX C: SHORT COURSE: ICT AND E-GOVERNANCE FOR MANAGERS

Note to Reader: This orientation programme can be offered in your municipality.

1 Content overview

This course gives an overview of key themes in the field of ICT for development, and how these new technologies influence and impact on economic and social development. It aims to give participants a conceptual grasp of the dynamics and trends relevant to government and the broader public sector. This is a short course of 15 hours duration, consisting of four three-hour interactive lectures and a group exercise.

2 Course Objectives

- To enable managers in provincial and local government to critically apply the concept of a 'network knowledge economy' to their mandates
- To enable managers to focus on the inter-relationships between ICT, e-governance, social and economic development
- To build an understanding of the manager's role in relation to building e-governance for social and local economic development

3 Session Summary

Time	Topic
Lecture 1 3 hours	<p>South Africa as an emerging 'network knowledge economy'</p> <p>Readings:</p> <p>Houghton & Sheehan, P (2000). <i>A Primer on the Knowledge Economy, Centre for Strategic Economic Studies, Victoria University, Australia</i> available at http://cfses.com/documents/knowledgeeconprimer.pdf</p> <p>Gauteng Global City Region brochure</p> <p>Group Exercise:</p> <p>You are an interdepartmental team from provincial or local government tasked with designing a project to use ICT to promote either (a) a particular social development objective or (b) a particular local economic development objective. Your group should identify its objective, create a project design for using ICT to meet the objective and prepare a presentation on this project. There will be a number of groups. Each group will have a maximum of 20 minutes to make the presentation.</p>
Session 2 3 hours	<p>Network infrastructure and social, local economic development – the 'wealth of networks': telecommunications, ICT infrastructure and services, broadband</p> <p>Readings:</p> <p>Abrahams, L., Bakker, B & Bhyat, M (2007) Municipal Broadband: The 'Next Generation' and the 'Last Mile', in <i>The Southern African Journal of Information and Communication</i>, Issue 8, 2007, LINK Centre, University of the Witwatersrand</p> <p>Van den Broek, W. & Lievens, B (2007) Why Broadband? The Meaning of Broadband for Residential Users, in <i>The Southern African Journal of Information and Communication</i>, Issue 8, 2007, LINK Centre, University of the Witwatersrand</p>
Session 3 3 hours	<p>ICT applications in government</p> <p>Readings:</p> <p>The electronic bureaucrat, A special report on technology and government, <i>The Economist</i>, February 16 2008</p>
Session 4 3 hours	<p>e-Governance for Social and Local Economic Development</p> <p>Readings:</p> <p>Abrahams, L and Reid, L (2008) e-Governance for Social and Local Economic Development, South Africa country report for the LOGIN Africa research project</p>
Session 5 3 hours	<p>Group Exercise Presentations</p>

3 Course Outcomes

On completion of this course, participants will be able to:

- Discuss the characteristics pertaining to the concept of a 'network, knowledge economy' and apply the concept to their organisations and country contexts
- Describe the interrelationships between ICT, social and economic development
- Understand the manager's role in relation to e-governance for social and economic development

