

# **Mpumalanga ICT Study**

## **Final Report**

Analysts: Astrid Hamilton, Tertia Smit, Penny Smith,  
Brian Neilson

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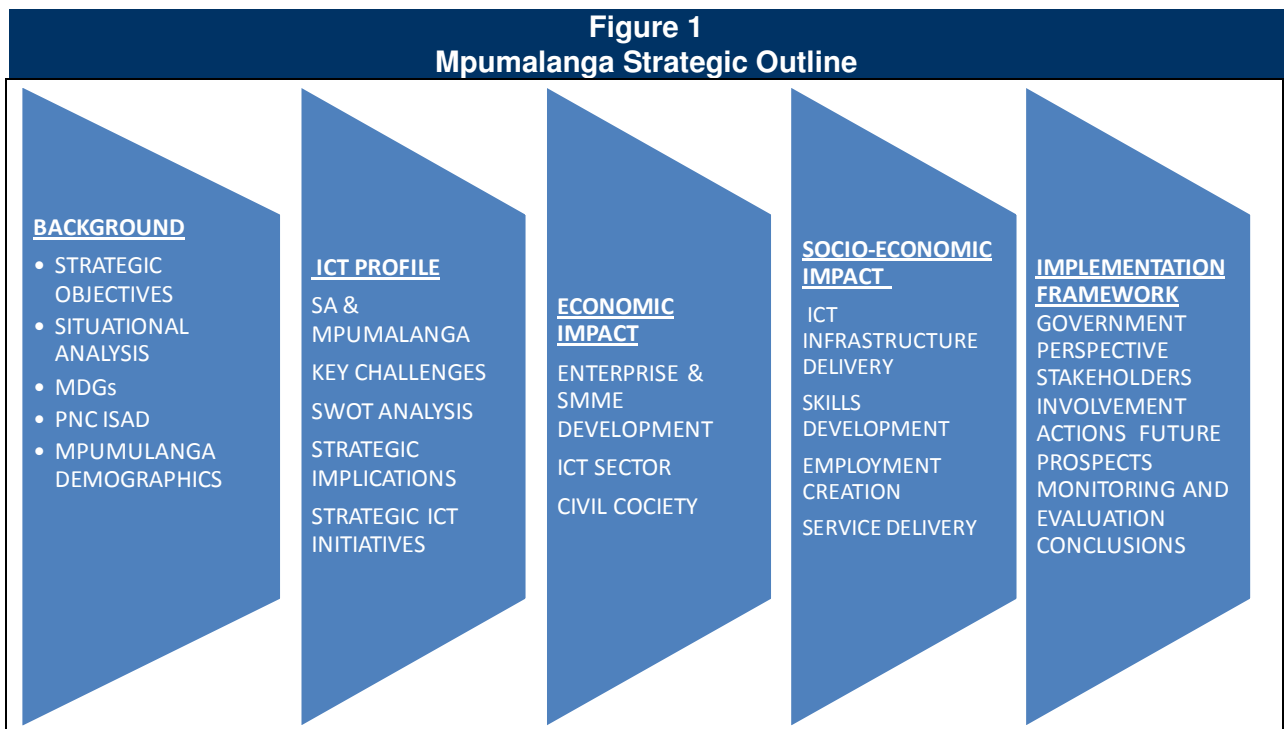


# 1. INTRODUCTION

The Mpumalanga government has realised the importance of the ICT sector as a contributor to the broader economy and its vital role in the development of a globally competitive and knowledge-based society.

It is against this backdrop that the Mpumalanga Provincial Government is drawing up an ICT Strategy that will be championed by strong leadership from government and from the private sector. The overall objective of the strategy is to accelerate economic growth and social development in the Mpumalanga Province.

Below is a flowchart of the approach used by the Mpumalanga Provincial Government to get to their ICT strategy.



Source: BMI-T, 2009

The Mpumalanga Department of Economic Development and Planning, through its strategic planning process, has identified the need for conducting research into the IT and telecoms industry in the Mpumalanga province.

The overall purpose of this research study is to determine the status, use and impact of IT and telecommunications in Mpumalanga. Once the primary research has been completed (400 surveys of business, government, ICT providers, schools, clinics, FETs, hospitals and civil society), the secondary research shown in this document, together with the primary research findings, will be collated into a final document with recommendations and a value matrix.

## **2. TERMS OF REFERENCE OF THE RESEARCH**

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### ***Premier's economic advisory council mandate***

The Sector Development Strategies and Programme stems from the mandate given by the Premier's Economic Advisory Council. The policy direction was also informed by the priorities of the President's State of the Nation Address in 2005 when ASGISA was launched. The main objective of these sector studies is to develop "value matrixes" for the identified sectors and with that as point of departure, to analyse the sectors in order to identify structural changes needed to ensure that these sectors become more competitive. These studies will identify major projects for government intervention, private sector involvement and Public Private Partnerships. During the State of the Nation Address (February 2005), the State President mandated the Ministry of Trade and Industry to conduct a Sector Development Strategy and Programmes study over a period of nine months.

The Department of Economic Development and Planning, as the custodian of economic development, conducted research studies in 2006 for the first six sectors and/or sub-sectors of the economy. As a follow up to the studies the Department will be conducting further research on four sectors during the financial year 2007/08. IT and telecoms was selected to be one of the sectors for research. In short this project can be interpreted as the manifestation of the ASGISA Programme of the central government.

Goal 8 of the Millennium Development Goals (MDG) Country Report 2005 focuses on developing a global partnership for development. One of the strategies proposed to achieve this goal is for government "in cooperation with the private sector, to make available the benefits of new technologies especially information and communication". The Mpumalanga Department of Economic Development and Planning, through its strategic planning process, identified the need for conducting a survey on the IT and telecoms industry in Mpumalanga Province in the 2008/2009 financial year.

### ***Problem statement***

Lack of information about the key economic sectors within the province restrain policy makers from making appropriate decisions in growing the economy. The study will intend to answer the following questions:

- What are the available and not available IT and telecoms services for the people in the province and how is the usage of those services?
- Is telecommunication policy and the monopolistic nature of Telkom hindering development of the sector in South Africa and the province?
- Does the province have the necessary skills in the IT and telecoms sector: if not, which skill development initiatives could improve performance of this sector?
- What measures or interventions could be put in place to improve performance of the IT and telecoms sector?

## ***Project scope***

The study will focus on the contribution of IT and telecoms to the provincial economy and how the sector is used by individuals, households, communities, government, business and civil society to improve their livelihood or operations. This will be done by the compilation of an IT and telecoms study for the province and establishing the relationship between the development of IT and telecoms infrastructure and its distribution to socio-economic and economic elements.

## ***Goals of the project***

The study will be used as a planning tool by government in developing intervention strategies to grow the economy.

- Determine the availability of the IT and telecoms infrastructures to the people in the province.
- Guide the IT and telecoms infrastructure development projects.
- Highlight the impact of IT and telecoms activities to the socio-economic and economic policy requirements.
- Reduce unemployment by realising some job opportunities.
- Simplified but improved livelihood of the citizens.

## ***Project objectives***

The overall objective of the study is to develop “value matrices” for IT and telecoms, to analyse the sector in order to identify structural changes needed to ensure that these sectors become more competitive and will include:

- Revealing the performance of the sector and its contribution to GDP-R
- Contribution of IT and telecoms investments to economic growth
- Analyse the financial contributions of the IT and telecoms services in the province
- Measure the access, usage and impact of IT and telecoms infrastructures
- Analyse the geographic distribution of IT and telecoms services in the province
- Analyse the demographic participation of IT and telecoms in the province
- Determine the IT and telecoms growth rate in the province
- Determine the IT and telecoms employment rates in the province
- Identify economic opportunities which will increase economic growth
- Identify some possible value chain on both the up-stream and down-stream
- Identify gaps and barriers which will have to be addressed in the sector

- Identify performance gaps on implementing IT and telecoms development strategies
- Recommend development strategies to improve the IT and telecoms infrastructure and services

### **3. PROJECT METHODOLOGY**

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The following tasks were undertaken in order to complete the ICT research study.

#### **Project tasks**

##### ***Phase 1: Project start-up and planning***

The tasks forming phase 1 of this project are shown below:

- Definition of outcomes and methodologies
- Agreement on project plan, scope and timing with the service provider.
- Identify sources of information and key stakeholders.
- Complete documentation and contractual formalities.

This phase was designed to produce agreement on the operational framework of the study.

##### ***Phase 2: Background research and data collection***

This phase comprise a general scan of the environment and serves to identify the major factors that require investigation. It comprises of the following activities:

- Literature scan to identify and obtain :
  - Previous research on subject
  - General research on IT & Telecoms
  - Previous development related studies
  - General research on IT & Telecoms
  - Regulatory research
- BMI-TechKnowledge will not interview individuals and households, but rather conduct in-depth analysis of data that has already been gathered by surveys such as the 2007 StatsSA Community survey.
- Refine Primary Research Methodology
- Development of a list of stakeholders and possible contributors to the investigation
- Define sample frame
- Agree sampling method

- Design questionnaire
- Plan questionnaire distribution
- Identify and approve field force of questioners

### ***Phase 3: Detailed primary research and analysis***

Interviews will be conducted on the following constituencies as part of this project:

- Business
- Government
- ICT providers
- Schools/Educational institutions, Clinics/Hospitals and civil society

The following steps will be taken:

- Finalise contracts for field workers
- Second briefing to field workers
- Collecting data and attending to queries from the field
- Conduct secondary research
- Stakeholder workshops with business, government stakeholders etc
- Capture data
- Data capturing in Access, SPSS & SAS formats (3 captureurs)
- Checking that data has been entered correctly
- Data analysis and recommendations
- Data aggregation
- Data validation
- Data verification
- Data manipulation into various relevant categories
- Extracting meaning from the data
- Synthesis of data secondary data with primary data

The collected data is captured and will be available in SPSS and Excel. Note that these are the appropriate software tools for this project, based on the type of research to be conducted, and that it will not be necessary to use Access and/or SAS for this project.

The primary and secondary research will be collated and analysed, and from this a model and a 'value matrix' will be developed. We will further consult with the Mpumalanga Provincial Government on the exact details of this framework and the resulting value matrix.

#### ***Phase 4: Final report and present findings***

During this stage a write up of the preliminary draft report will be done. Intense consultations will take place between BMI-T and MPG during this period on various aspects of the report. The following steps will be taken

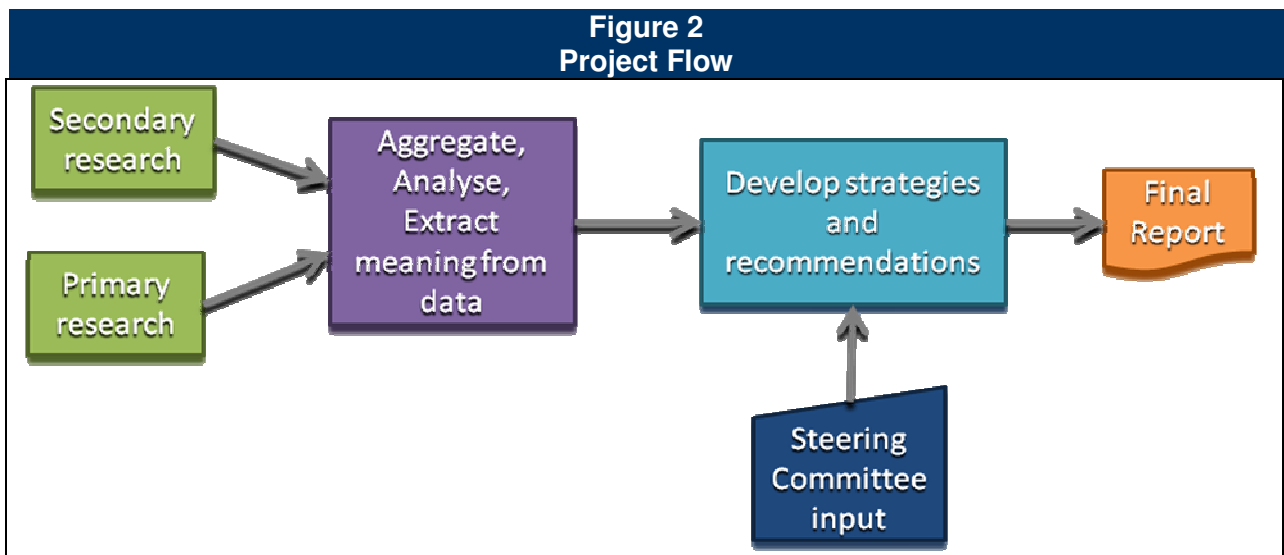
- Synthesis of key conclusions and recommendations
- Draft report and workshop
- Finalisation of the report and PowerPoint presentation
- Present findings for report

At the conclusion of the project, a final report will be produced in both hard and soft copy containing the Executive Summary.

#### **Overall project methodology**

The project methodology consisted of a two-pronged approach whereby primary and secondary research was conducted to find out as much information as possible to answer the objectives of the project.

Below is a figure to illustrate the high-level research process involved in getting to the final report. The figure shows that the secondary research data together with the primary research data are aggregated and analysed and meaning is extracted from all the data available. BMI-T, with input from the project steering committee, will then develop strategies and recommendations, based on the information obtained, and all this information will then be put into a final report and presentation.



Source: BMI-T, 2009

At the outset of the project the outcomes and methodologies to be used were agreed upon as well as project scope and timing and any relevant sources of information were identified.

### ***Secondary research methodology***

The intention of this background or secondary research was to find information available from BMI-TechKnowledge and other organisations, such as Statistics SA, on general demographic and geographic information available on Mpumalanga as well as ICT access and usage in SA and Mpumalanga by business, government, education and health sectors and individuals/households.

Secondary research is the process whereby research is conducted based on the information already available in the public domain. As BMI-TechKnowledge is a research company, we also have access to our own research reports and have included all the relevant information from our reports that were done via both primary and secondary research methodologies.

Secondary research involves the study of all available public information relevant to the objectives of the project. In this case, all relevant data from the following sources were studied:

- BMI-TechKnowledge research reports and publications
- StatsSA
- SAARF
- Mpumalanga Government
- National Government
- Banks
- Press articles



- Journal articles
- Company reports
- Any other relevant public domain documents

The following information was obtained from the secondary research:

- Previous research on subject
- General research on IT & Telecoms
- Previous development related studies
- General research on IT & Telecoms
- Regulatory research

BMI-TechKnowledge did not interview individuals and households, but rather conducted in-depth analysis of data that has already been gathered by surveys such as the 2007 StatsSA Community survey.

### ***Primary research methodology***

The primary research shows the results and analysis of the survey portion of the research project.

The surveys were adapted for the different sectors interviewed, i.e. business, education, civil society and health (schools, clinics, hospitals, museums, libraries etc.), ICT providers and government organisations.

The methodology used for the primary research portion of the project is described below.

Primary research is the process whereby research is conducted by interviewing appropriate organisations using a structured questionnaire.

The primary research portion of this project involves interviews with government, businesses (SMMEs (urban and peri-urban), large and corporate companies), ICT providers, education and health organisations.

The following number of interviews was conducted by sector:

<b>Table 1 Data sample and segmentation</b>	
<b>Sector</b>	<b>Number of Interviews</b>
Schools, Clinics, Civil Society	53
Business	300
Government	18
ICT sector	20
Total	391

A structured questionnaire was developed by BMI-T and signed off by Mpumalanga Department of Economic Development and Planning. The questionnaire was slightly adapted for each sector covered by the surveys in order to ensure that the questions were applicable to them and also to ensure the most value was obtained from them. The overall

purpose of the questionnaires was identical and the majority of the questions asked were the same.

It must be kept in mind that when open-ended questions are asked of respondents, perception and opinion comes into it and the answers provided must be seen in that light.

The surveys were further segmented in each sector by district, industry sector and company size, where appropriate.

### *Sampling*

The interviews were conducted telephonically using a structured questionnaire and the demographic splits originally worked out using the secondary research of the demographic information of Mpumalanga were adhered to as far as possible.

Due to time constraints and unavailability or unwillingness of certain respondents to complete surveys, the sampling plan was treated as a guideline and best effort was made to reach the exact segmentation targets set. In the body of the report the exact splits are shown.

For some of the smaller sample size groups like government, schools and clinics, face-to-face interviews were conducted, where needed.

### **Business Surveys**

The business surveys covered urban and peri-urban SMMEs as well as large and corporate companies in Mpumalanga.

The geographic breakdown of business interviews is shown below.

The surveys in the three Mpumalanga district municipalities are split as follows:

<b>District Municipality in Mpumalanga</b>	<b>Number of interviews</b>
Gert Sibande District Municipality	79
Nkangala District Municipality	75
Ehlanzeni District Municipality	146
Total	300

Source: BMI-T, 2009

The company size, industry sector and annual turnover breakdowns are shown in the body of the report, under the demographics section.

### **ICT Provider Surveys**

Telephonic interviews were conducted with 20 ICT providers in Mpumalanga. The majority of surveys were conducted with smaller ICT companies based entirely in Mpumalanga and a small number of surveys were conducted with large ICT companies that have regional offices in Mpumalanga.

### **Education and Health Surveys**

Telephonic and face-to-face interviews were conducted with 14 private and public clinics, 31 public and private primary and high schools, both rural and urban, 8 FET and private colleges.

### **Government Surveys**

Government interviews were conducted both telephonically and face-to-face with 9 provincial departments and well as 9 district and local municipalities.

## **Final report**

The primary and secondary research were then collated and analysed, and from this a model and a 'value matrix' was developed. BMI-T also consulted with the Mpumalanga Provincial Government on the exact details of this framework and the resulting value matrix and final recommendations coming out from the ICT study findings.

## **4. EXECUTIVE SUMMARY**

The results of the primary and secondary research show that there is much work to be done by the Mpumalanga Provincial Government with regard to IT and Telecoms infrastructure and services in the province. Recommendations are discussed in the following chapter.

### **Consumer ICT summary**

#### **ICT penetration**

Mpumalanga ICT penetration is below the level of South Africa for the following:

- Television (64% vs. 66%)
- Fixed line telephones (9% vs. 19%)
- Computers (11% vs. 16%)
- Internet access (4% vs. 7%)

Only radio (78% vs. 77%) and cellphone (77% vs. 73%) penetration is higher than the level for the whole of South Africa. This is most probably as a substitute for poor fixed line and TV penetration.

Of the three district municipalities, Ehlanzeni is ranked the lowest when one averages their penetration for the aforementioned ICT indicators. Their average penetration is 31%, compared with 35% for Nkangala and 34% for Gert Sibande.

The rural versus urban internet penetration rates for households are shown in the table below.

	<b>Settlements &amp; Non-Urban (Less than 500/ Non- Urban) Rural</b>	<b>Small Towns &amp; Villages (500 - 39 999) Small Urban</b>	<b>Cities &amp; Large Towns (40 000 - 249 999) Large Urban</b>	<b>Grand Total</b>
Dial-up (Standard telephone line)	5 176	1 209	3 330	9 715
Cable Broadband (ADSL)	314	2 072	4 339	6 724
Wireless Broadband (iBurst, 3G, HSDPA, Wi-Fi)	1 015	5 505	1 886	8 405
No Internet access	443 751	151 095	143 748	738 593

at home				
Grand Total	450 255	159 880	153 303	763 438
<b>Percentage splits</b>				
	<b>Settlements &amp; Non-Urban (Less than 500/ Non- Urban) Rural</b>	<b>Small Towns &amp; Villages (500 - 39 999) Small Urban</b>	<b>Cities &amp; Large Towns (40 000 - 249 999) Large Urban</b>	<b>Grand Total</b>
Dial-up (Standard telephone line)	1.1%	0.8%	2.2%	1.3%
Cable Broadband (ADSL)	0.1%	1.3%	2.8%	0.9%
Wireless Broadband (iBurst, 3G, HSDPA, Wi-Fi)	0.2%	3.4%	1.2%	1.1%
No Internet access at home	98.6%	94.5%	93.8%	96.7%
Grand Total	100.0%	100.0%	100.0%	100.0%

Source: AMPS 2008 RA - Household Database

Rural internet access is very low (1.4% of rural households) with dial-up being the highest. Reasons for this include lack of available infrastructure and costs.

For small towns and villages internet access is slightly higher, with wireless access being the highest. Again the reason for this is most likely lack of available fixed line infrastructure and high penetration rate of cellphones, making this method of internet access the most feasible.

For cities and large towns cable broadband access is highest due to available infrastructure.

### ***Broadband***

Mpumalanga only has 4,5% of all broadband connections in South Africa. In 2007 the total number of broadband connections in SA was 780,594. This excludes broadband access at educational institutes, Thusong service centres, at internet cafes or over their mobile phones.

If no additional intervention is taken by Mpumalanga province BMI-T estimates a broadband penetration of only 2.8% by 2010 compared with 4.52% for the whole of South Africa.

### **Business survey summary**

The main findings from the 300 SMME, large and corporate companies surveyed are discussed below.

### ***Demographics***

The main points from the demographic section of the 300 business surveys indicate:

- 61% of the businesses surveyed are SMMEs with from 1 to 50 employees
- 49% of businesses surveyed are in Ehlanzeni and a quarter each in Nkangala (25%) and Gert Sibande (26%) municipal districts

- Nelspruit (32%), Middleburg (12%) and Ermelo (8%) are the three cities/towns with the most survey respondents
- 37% of the respondents are in the wholesale and retail trade sector, manufacturing and community, social and personal services are the next biggest sectors with 11% each
- 70% of respondents have between 1 and 100 employees in the whole company
- 67% of respondents have between zero and ten knowledge workers, 12% have more than 50 knowledge workers in the whole company
- 45% of respondents only have one IT and/or Telecoms employee in the whole company
- 67% of the respondents have between one and ten computers in their whole company
- 51% of businesses surveyed have between R1 million and R30 million annual turnover

### ***ICT access and usage***

ICT services currently used:

- 95% of respondents have internet access and software
- there is not a high level of sophistication in terms of ICT services used by the majority of respondents and the majority of respondents have basic ICT services only, with just over half having a local area network
- Gert Sibande respondents have much lower levels of usage of voice services (fixed line and cellular) than the other districts as well as lower levels of usage for IP VPN and outsourced hosting services which are much more sophisticated ICT services
- the larger companies have higher levels of usage for all ICT services, especially the more sophisticated ones such as WANs, LANs, IP VPNs and outsourced hosting services
- The highest average rating is for software and then IT services suppliers, the lowest average rating is for fixed voice, for which 80% of the respondents' primary supplier is Telkom
- Internet access connection types:
  - The most common form of internet access is ADSL (61%), followed by mobile 3G data cards (45%), 23% still use dial-up which is an old technology with slow speeds and low bandwidth which can be a hindrance to a business's productivity
  - The fact that not all respondents have internet access and that almost half rely on mobile data cards and 23% use dial-up to get access shows a lower reliance on

sophisticated technology in Mpumalanga, this can be due to a lack of available infrastructure, lack of available funds or a lack of ICT knowledge.

- Gert Sibande lags behind the other districts for ADSL connections and has the highest dial-up connections, Nkangala has the highest mobile 3G card connections
- Primary and secondary industries have higher usage of dial-up and mobile 3G cards than retail wholesale and other services and financial and business services industry groups.

### ***IT and Telecoms issues***

#### *ICT problems*

- Infrastructure problems are the most common problems experienced which have affected the companies' IT and Telecoms services
- The greatest effects were experienced from power outages, telephone lines being down and slow repair times by ICT service providers
- Ehlanzeni was more strongly affected, as was the retail and wholesale trade sector and small and medium companies
- Internet connection and power related problems are the main issues with regard to IT
- For telecoms infrastructure and poor service are the main issues
- 37% of respondents have experienced ICT service/infrastructure problems at their company in the past year (Nkangala and primary and secondary industries experienced the highest levels of problems)

#### *Effect of ICT problems*

- The biggest effect of ICT infrastructure and services problems are loss of income (67%) and service levels to customers affected (59%)
- Ehlanzeni experienced greater effects from ICT problems and the financial and business services have highest income losses, retail and wholesale services had highest effect for all other problems experienced

### ***IT and Telecoms growth and spend***

#### *IT and Telecoms spend*

- 63% spend less than R100 000 per annum on IT, almost 59% of respondents spend less than R100 000 per annum on telecoms, 32% spend between R100 000 and R1 million on telecoms, thus respondents spend more on telecoms than on IT
- Nkangala respondents spend more on IT and Telecoms, large and corporate companies spend a lot more on IT and Telecoms and primary and secondary

industries spend more on IT and financial and business services spend more on Telecoms.

### *Factors accelerating and delaying IT and Telecoms spend*

- The availability of money/budget is the major determinant of the amount of IT and Telecoms spent
- Top spend accelerating factors are: improved profitability (32%), process efficiency improvement (19%) and expansion of operations (16%)
- Top spend delaying factors are: budgetary restrictions (26%), unstable business environment (23%) and no technology requirement (17%)

### *IT and Telecoms Wish List*

- Broadband internet (31%) and Voice over IP (13%) are the top two items on the wish list showing a generally low level of sophistication for the business respondents in that ADSL and VoIP are the top of the wish list, implying the respondents do not yet have them
- The only ICT service promised by government/parastatals that has not materialised is Neotel/competition to Telkom.
- ICT services that would help respondents generate more revenue are broadband and improved ICT services and infrastructure
- 60% of respondents are not investing in any ICT services this year showing that funds, infrastructure and ICT knowledge are a problem in the province. General upgrading, broadband and wireless internet and VoIP are the ICT services that respondents plan to invest in
- Just over 80% of respondents would consider using a broadband network supplied by the Mpumalanga Provincial Government if it were of a good quality and at a reasonable price

### *IT skills*

- 69% of respondents have not experienced IT skills shortages but 7% have been strongly or severely affected
- The main shortages were for: Microsoft skills, basic IT skills, advanced IT skills and IT support and implementation skills
- The top way government can assist with the IT skills shortage according to 49% of respondents is through training, workshops, opening training centres, offering free training at schools and at work
- 26% of respondents indicated the department of education should help and 16% said local or national government. 28% of respondents do not think the government can assist with the IT skills shortage.

- Primary and secondary industries and SMMEs are more strongly affected by IT skills shortages.

## ***Conclusion***

The level of ICT access and usage for businesses surveyed in Mpumalanga is not highly sophisticated. A number of reasons for this are lack of budgets, lack of available infrastructure and ICT services, lack of IT skills in the province and a lack of ICT knowledge especially for the smaller businesses. Gert Sibande municipal district generally has lower levels of sophistication with regard to ICT usage and the most sophisticated is the Ehlanzeni district, especially Nelspruit businesses.

The main IT and Telecoms problems affecting businesses are infrastructure and then service related. Power outages, telephone and internet downtimes are major problems. These problems affect the companies' income and the service levels they can offer to customers.

IT and Telecoms spend of the respondents is quite low, however the majority of respondents were small and medium-sized companies.

Budgets are the main reason for spending or not spending money on ICT. However, other factors influencing spend are process efficiency improvements and unstable business environment.

The ICT wish list of respondents indicates many respondents don't have broadband internet access or services that would reduce their costs such as VoIP and Least Cost Routing.

There is a high level of interest in an Mpumalanga Provincial Broadband network being implemented.

IT skills shortages don't seem to have affected the majority of businesses although smaller companies are worse affected. The respondents had many ideas for how the IT skills shortage can be improved, most to do with IT and Telecoms training and education.

## **Government survey summary**

The main findings from the government surveys are discussed below.

### ***Demographics***

Nine (9) Provincial Departments and 9 local municipalities were interviewed. These included the Department of Health, Roads & Transport, Public Works, Education, Finance, Culture, Sports & Recreation, Economic Development & Planning, Local Government & Housing and the Premiers Office Mpumalanga.

The municipalities interviewed included the following: Gert Sibande, Msikaligwa, Kimjindi, Emalaheni, Emahazeni, Ehlanzeni District Municipality, Nkangala District, Malelane & Nkomazi Municipality and the Barberton Municipality.

### ***ICT access and usage***

ICT services currently used:



- All respondents have internet access and a local area network (LAN), and most of them had hardware, software and IT services
- This indicates that there is a reasonable level of sophistication in terms of ICT services used by the majority of respondents
- Most municipalities had a wide area network (WAN) but only 6 Departments had WAN
- Ratings for all suppliers were good to excellent.

#### Internet access connection types:

- The most common form of internet access is Diginet Leased line (other than VPN) with 10 respondents having this form of internet connection.
- ADSL (9 responses) was the next most prevalent form of internet connection, followed by mobile 3G data cards (6 responses).
- Five (5) respondents still use dial-up which is an old technology with slow speeds and low bandwidth which can be a hindrance to productivity
- All departments and municipalities had some form of internet connection. However, this access to technology is not passed on - or prevalent amongst - Mpumalanga's constituents
- Very few Departments or municipalities offered services to their constituents. Only 6 municipalities had websites for their constituents.

### ***IT and Telecoms issues***

#### *ICT problems*

- Lack of budget/capital and cost of infrastructure are the most common problems experienced by Departments and municipalities which have affected their IT and Telecoms services.
- Low levels of understanding and knowledge amongst constituents on how to use such services was also cited by municipalities as a problem in terms of delivering ICT services to constituents.

#### *Service delivery*

- Some respondents within Departments and municipalities believe that increased bandwidth and access to broadband are vital in order to improve their services to constituents.

### ***IT and Telecoms growth and spend***

- More than half the respondents in both Departments and municipalities indicated that budgetary restrictions was the one factor that is the most likely to delay external IT and Telecoms projects and related spending for 2009.

- Insufficient resources and skills, lack of ICT and red tape and lack of buy-in from political principals were also factors affecting projects and related spending for 2009.

### ***IT and Telecoms projects and developments***

- There are very few external IT or Telecoms projects being invested in for constituents by Departments.
- Similarly, very few Departments and municipalities indicated that they had any ICT projects happening at the moment that were not internal.
- Some municipalities in Mpumalanga indicated that they were still investigating needs for constituents; however, other municipalities were considering pay-as-you-go access at ATMs as well as interactive websites. Generally the lack of external projects for the benefit of constituents is very concerning.

### ***ICT top priorities***

- Each Department and municipality had very different "top 3 key ICT strategic objectives". These included a number of internal programmes such as knowledge management systems, access to information/connectivity and communications at an affordable rate, as well as staffing objectives in terms of training and hiring more personnel.
- Similarly IT and Telecoms top priorities were also diverse, with VoIP and broadband projects being mentioned by 25% of the respondents. Municipalities are focused on the integration of systems and training of staff. Departments mentioned projects such as rolling out infrastructure, decentralising functions and installing operating systems.

### ***IT and Telecoms wish list***

- Broadband internet, followed by wireless internet resulting in improved access are the top two items on the wish list for Departments and municipalities.
- VoIP was also on the wish list for 5 respondents, indicating that the respondents do not yet have them and this demonstrates a lower level of sophistication within the local governments departments and municipalities.

### ***IT skills***

- More than half the respondents said they had been strongly to moderately affected by the IT skills shortage
- The biggest shortages were in networking and systems development
- Respondents were of the opinion that government could assist with the IT skills shortage through comprehensive training, learnership programmes and by offering internships. They also indicated that SITA could offer the most assistance in this regard.

## **Conclusion**

Provincial departments and municipalities have a fairly sophisticated level of ICT services at their disposal, but they are focused more internally than on supplying ICT services for constituents.

Budget constraints, lack of ICT and red tape are delaying implementation of ICT programmes and lack of ICT skills is a major problem within government, both in terms of attracting and retaining IT staff. The level of knowledge or education of constituents is also a problem for the municipalities when delivering ICT services.

Broadband and wireless internet are at the top of the respondents' wish list, which they feel could dramatically improve their services to constituents.

There does not appear to be a co-ordinated approach to resolving ICT issues and planning and implementing ICT projects/programmes within the Mpumalanga Provincial Department.

Each department seems to be developing its own infrastructure and this is creating problems. The problems mentioned include:

- Incompatibility between operating systems
- Non-compliance with stated policy and procedure
- Security problems when interfacing systems
- No co-ordinated approach to common problems, resulting in conflicting systems and procedures
- No concept of the total ICT requirement for the province in terms of skills, infrastructure and budget

## **ICT Provider survey summary**

The main findings from the 20 ICT provider surveys are discussed below.

### **Demographics**

- Of the twenty ICT providers interviewed, seven were from Nelspruit and seven from Middelburg. In all, ten respondents in this category were from Nkangala district municipality, nine from Ehlanzeni and one from Gert Sibande.
- 15 of the respondents were local companies only and 5 were national companies with office(s) in Mpumalanga.
- 18 respondents had 50 or less employees in Mpumalanga. 16 of the ICT providers were SMEs (1-50 employees) while 4 were large/corporate companies (over 50 employees nationwide).
- Only one respondent had more than 50 computers, ICT employees and knowledge workers in Mpumalanga.

- 14 respondents expect their annual turnover to grow in the coming year, while 4 expected turnover to remain the same.
- 15 of the 20 respondents' turnover stays in Mpumalanga.
- 10 respondents provide ICT services to government organisations, 19 provide services to SMMEs and 12 provide services to corporate companies.

### ***ICT projects***

Two ICT providers had major IT and telecoms projects awarded but not yet started.

Major IT and telecommunications projects currently underway:

- One three-year office automation project for government, and two telecommunications projects, and a ten year municipality service project.
- The majority of the projects are short term contracts of up to a year.
- Short term projects for municipalities or government include installing anti-viruses and licences, shared services platforms, providing software, hardware and stationery, IT telephony contract and related services, supply tenders and VoIP installations.
- Mid to long term projects for municipalities or government include various maintenance contracts.
- Corporate projects include mostly short term projects - delivering stationery, maintenance and installations.

Major IT and telecommunications projects completed in the past two years:

- These were mainly for corporate clients, and include providing management information systems, radio frequency, IT and printer maintenance.
- Government projects included the installation and maintenance of computers for schools, the provision of software, hardware and stationery to the SAPD and government and the installation of wireless connectivity for the Department of Health.

### ***ICT services provided***

- 19 respondents offer IT services, while software, hardware and LAN are offered by 16 respondents.
- 19 respondents defined their business function as that of an IT service provider, 18 included reseller of hardware/software in the description, while 9 were telecoms service providers, and 7 were telecoms resellers.
- None of the respondents import or export ICT products or services.
- 12 respondents indicated they would be investing in new IT or telecoms services or infrastructure to offer to clients in the next year. VoIP was mentioned by 3

respondents, internet by 2, and mentions were made of WAN, wireless, radio, and PABX.

- The value of investment in new ICT services/infrastructure ranged from R100,000 to R30 million and R50 million.

### ***IT and Telecoms issues***

#### *ICT problems*

- Natural disasters and power outages were the most common problems experienced in the past year, closely followed by supply chain problems, staff retention, theft and vandalism.
- Power outages had the greatest effect, followed by supply chain problems and theft.
- 6 respondents had no problems with providing IT infrastructure and services to their clients. The biggest problem was the lack of skilled and experienced technicians.
- The lack of skills was the biggest issue regarding the provision of telecoms infrastructure to clients. Other issues included cost increases, poor infrastructure, while 4 respondents mentioned the problem of Telkom being the only fixed line provider.

### ***Government issues***

- The majority of providers had no comment regarding the non-delivery of promised IT or telecoms services by government. The second fixed line operator, sufficient ADSL and fibre optic links were mentioned in terms of non-delivery.
- The most common problem with working with government is payment issues.
- Another shared issue was the battle to get IT-related tenders awarded.
- Not being registered as BEE, affirmative action, corruption and crime in the government were also mentioned as problems experienced.

#### *Broadband internet provision by provincial government*

- 16 respondents would consider using a good quality broadband internet service at a reasonable price if provided by the Mpumalanga Provincial Government, but 4 were not interested.
- The majority of respondents were interested in the possibility of saving costs and improving efficiency through this service, but some were apprehensive as to reliability, the standard of service levels offered and how comprehensive the coverage might be.

- Satisfaction with their current provider and the provision of their own broadband were the only reasons given for not considering using a provincial government supplied service.

#### *ICT service/infrastructure delivery problems*

- 13 respondents have not experienced ICT service/infrastructure delivery problems in the past year.
- Of those who experienced problems, the common issues were Telkom and a lack of infrastructure for Wi-Fi hot spots. Other problems included power outages, high telephone costs, slow VPN, a need for suppliers to be educated and different ethics and expectations from service delivery suppliers.

#### *Effect of ICT problems*

- 7 respondents said that these problems affected their service delivery to customers, and 7 said that they had lost income through downtime of ICT service/infrastructure to clients. 6 respondents said that these problems affected production and inhibited growth, while 3 have set up alternative infrastructure sources.

#### **IT skills**

- 9 respondents have been strongly or severely affected by IT skills shortages, although 6 have not experienced such shortages.
- The most common problem was lack of skills and experience in both the telecoms and IT areas, attributed to limited resources and the shortage of continual work opportunities in the province.
- Other specific skills shortage areas were networking, telecoms, wireless installations, Microsoft hardware support and general maintenance.

#### *Government's role in ICT skills shortfall*

- More than half of the respondents think government could assist with the IT skills shortage by providing IT and telecoms education, training and workshops at affordable prices, and offering support for skills development.
- Other suggestions included "importing" qualified and experienced personnel from outside the province, offering international work exchanges, restructuring the faltering internship programme, improving transport from townships and making it easier for white-owned companies to get contracts.
- 6 respondents felt government could not assist with the skills shortage problem.
- SITA was listed as the most relevant agency to be of assistance with the IT skills shortage. The departments of Labour, Education and the Premier's office were also mentioned.

## **Conclusion**

Lack of skills was the biggest issue regarding the provision of telecoms infrastructure to clients. Other issues included cost increases, poor infrastructure, and the fact that Telkom is the only fixed line provider.

ICT providers doing work for government organisations experienced payment delays, corruption, tender awarding issues and BEE issues.

Most of the ICT providers surveyed would consider using a MPG broadband network.

There does not currently appear to be a major locally grown/established ICT supplier in Mpumalanga. Corporate clients tend to use in-house services from head office or to major cities for support, either in Durban or Gauteng. There simply does not seem to be enough work currently to sustain a larger specialised IT company in Mpumalanga.

Smaller companies tend to use local service providers which are small companies with only one or two technicians. The bigger ICT providers in Mpumalanga have several income streams and try to provide a cross section of services. The major ICT providers from Gauteng and listed companies have not properly established themselves in terms of staffing, infrastructure and capacity. Where these companies have an office it is to support a specific contract/established client base or an address to tender from.

There appears to be a serious gap in the market caused by lack of demand. ICT company operators appear to be technicians working in the industry themselves and this may be representative of the shortage of skilled persons or simply a lack of financial reward in the industry.

## **Education and Health survey summary**

The main findings from the schools, colleges, clinics and hospitals surveys are discussed below.

### **Demographics**

- 39 educational and 14 health organisations were interviewed -31 schools, 14 hospitals/clinics and 8 colleges.
- 16 respondents were from public primary schools, 11 from public high schools, and 4 respondents were from independent schools
- 3 respondents were from FET colleges and 5 from private colleges.
- 34 of the 53 respondents were from Ehlanzeni (7 from Nelspruit), 12 from Gert Sibande, and 7 from Nkangala.
- 24 of the 31 schools and 6 of the 8 colleges surveyed are in the Ehlanzeni district, and 7 of the 14 clinics and hospitals are in Gert Sibande district.
- 21 respondents had a total annual budget for the last financial year of less than R1m, 9 had a budget of R1m to R5m, 7 were from R5m to R30m, and 6 had a budget over R30m. 10 respondents did not divulge their financial details.

- The budgets for colleges range from R1 million to R100 million, while the budgets for schools are the lowest with only 5 over R5 million, and 20 of the 31 schools have a budget under R1m.
- Half of the clinics and hospitals did not reveal their budget information, but 4 of the remaining 7 respondents have budgets between R60 million and R300 million.
- 37 of the 53 respondents had between 4 and 50 employees, the remaining 16 had between 53 and 1,019 employees.
- 27 respondents had between 1 and 16 knowledge workers, the remaining 26 had between 17 and 350.
- The number of students for schools and colleges ranged between 49 and 5000 - FET colleges from 3000 to 5000 students, schools from 49 to 1292 students, private colleges from 68 to 1030 students. The hospitals and one public clinic have between 220 and 600 students.

### ***ICT demographics***

- 7 respondents had no computers, 13 had between 1 and 5, 16 had between 6 and 50 and the remaining 16 had between 60 and 1500 computers (
- The number of staff computers was zero for 8 respondents, 28 had between 1 and 5 and remaining 17 had between 9 and 100.

### ***ICT access and usage***

ICT services currently used by respondents are shown below.

- 51 respondents have fixed voice services - all use Telkom.
- 16 have cellular voice services. Suppliers include: Vodacom (4), MTN (1), Nashua (4), Autopage (1), and Logitel (1).
- Three quarters of respondents use IT services (40 respondents), hardware (40) and software, (39). A variety of suppliers were mentioned.
- 31 respondents have a LAN and 10 a WAN. LAN suppliers include: SITA (3), in-house (18), Digisys (1), Department of Health (1), Department of Education (1)
- 30 have internet access. Suppliers include Telkom (7), MWEB (6), @lantic (2), Internet Solutions (1), SITA (2), and Cawy (1). WAN suppliers include: Eclipse (1), @lantic (1), SITA (1), Cawy (1)
- 4 have outsourced hosting services. 2 mentioned Hertzner as their supplier.
- 18 respondents have ADSL for their internet access, 12 have fixed wireless (iBurst or Sentech) and 9 use dial-up.



- 28 of the 31 schools have internet access - 12 have ADSL, 7 fixed wireless, and 7 dial-up.
- All FET colleges have internet access. One of the private colleges does not have internet access. 4 colleges have ADSL, and 3 a diginet leased line other than VPN. None use dial-up.
- All hospitals have internet access, but only 2 of the 11 clinics have internet access. No connection type predominates in this group.
- Training programmes are available for IT skills but these vary in success from circuit (set local areas) to circuit depending on management and proximity to a training centre.
- Urban schools are much more likely to have computer centres than outlying schools and skills are a major problem.
- Generally outlying schools had only basic knowledge of ICT terminology and concepts and not much practical exposure
- Hospitals surveyed do not have a full IT department to support their infrastructure.
- Most schools surveyed did not have fax lines.

### ***IT and Telecoms issues***

#### *IT (hardware, software or IT services)*

- Of the schools respondents, financial limitations was the most common issue raised, specifically the high cost of licences, installation, maintenance, internet connections, upgrading systems and insurance.
- A total lack of support, both technical and financial, was an issue for schools, specifically a lack of on-site skills and poor turnaround times for the Department of Education's maintenance services.
- In the health sector, the lack of hardware and funding were the most common issue. IT support was also a major problem for clinic and hospitals: no response to requests for help, very slow support, poor wireless services, departments blaming each other for poor assistance and no skills training.
- A specific problem discovered in the education sector interviews was viruses. All the outlying areas and schools had a virus problem. It could be assumed that the virus problem is resultant from a lack of education regarding safe operating practices and also a direct lack of infrastructure through which protective programs can be distributed and updated. A similar virus problem could become prevalent in outlying clinics and hospitals as well should the rollout of ITC not be properly managed and applied with the necessary training.
- Schools surveyed do not have similar operating programs. Certain schools were still on Windows 95.

- Each school has different printer, different computer and varying levels of IT dependency.

#### *Telecoms (Fixed or cellular voice or internet services)*

- The majority of respondents, from both health and education, found telephone or internet lines going down their most prominent problem. Reasons given included cable theft, lightning and other weather-related strikes and power-outages. Very poor and slow maintenance from the fixed line operator exacerbates this problem.
- When prompted about problems experienced over the past year, 29 respondents identified power outages, 27 telephone lines down, 27 internet connection down, and 44 slow repair times by ICT SP. These responses were balanced throughout the sectors.
- The rating for Telkom from these areas was generally high with comments such as “only a problem when whole area has a problem”, “internet does not work”, “telephone lines do not work for fax”. The expectations outside of the city are low. Most respondents in towns were unhappy with Telkom, perhaps as a sign of expectations and reliance on ICT. Interestingly, most schools have e-mail addresses on their own initiative but mostly these are not working.
- A VPN infrastructure rollout for schools has started with planning and budget completed and in most areas visited, installations of dishes at schools were completed. The suppliers mentioned were a Johannesburg-based company, although some of the installations may have been made locally. However, the levels of ICT awareness at some of the schools where the communication dishes are installed appear to be very low. At certain facilities the dishes have been in for more than six months without being operational (or the school having internet).
- Health institutions have various wireless systems and a number of initiatives that will be of benefit once operational. The difference between clinics in rural areas and facilities in town are immense. Infrastructure invested in is not delivering service required.

#### *Mpumalanga Provincial Broadband*

- 45 out of 53 respondents would consider using a good quality broadband internet service provided by the Mpumalanga Provincial Government at a reasonable price - 25 respondents would definitely consider using, and 20 respondents might consider using it.

#### *Effect of ICT problems*

- 29 respondents stated that their organisation had been affected by ICT problems in the past year.
- Less than half the colleges are affected by ICT problems, 17 out of 31 schools and 9 out of 14 clinics and hospitals are affected.

- 27 of 29 respondents stated that not being able to provide services is the biggest effect, and 16 said such problems affect their service levels. 22 respondents (14 of these from schools) cited loss of effectiveness as the major effect.

### ***IT and Telecoms growth and spend***

The budgets are very varied for the different organisations surveyed.

- Private clinic budgets are low for those who answered, 2 had below R100 000 for IT and Telecoms each, one respondent had an IT budget of R400 000 and Telecoms budget of R1 million.
- Hospitals range from R1 million to R8.5 million.
- Most public schools had budgets well below R100 000 each for IT and Telecoms.
- For private schools half were up to R100 000 and half between R100 000 and R250 000.
- 2 FET colleges had budgets between R1 and R1.5 million for IT and between R500k to R1 million for IT and Telecoms respectively, and the other R2.5 million for IT and R900k for Telecoms.
- Private college budgets for IT and Telecoms are mostly up to R100k only, with one with between R100k and R250k.

#### Budgets' growth

- Most are expected to increase, with only 3 decreases in budgets expected.
- Budgetary restrictions were cited by 38 respondents as the major factor delaying ICT spend. Other inhibitors only received a few mentions - skills shortages, unavailable infrastructure, and low confidence in the ability of IT to deliver.
- Similarly, the factor most likely to accelerate IT and Telecoms projects and related spending for 2009 was increased budget/funding (43 respondents across all sectors). 4 respondents (3 schools and 1 college) mentioned expansion of operations.
- Schools use their own budgets and often donor funds to supplement their budgets.

### ***IT and Telecoms wish list***

- The schools' wish lists were very basic, including land line telephones, computers and internet connections. Wireless, ADSL, VoIP and broadband were requested for cost saving and productivity reasons.
- The clinics' requests were even simpler: land line telephones for basic communication reasons, computers to run databases of patients and their histories; fax machines to order medicines; broadband facilities for telemedicine; email for online medicine orders and to communicate with head office and a

photocopier in order to make copies of patients' ID documents. VoIP was also listed in order to attempt to lower telephone bills.

IT or Telecoms services promised by government or parastatals that have not materialised:

- "No services" was the most common response.
- Others included providing equipment; telephones, computers, fax machines, photocopy machines, interactive boards; and services such as internet connectivity, ADSL lines, wireless communication and satellite connections.
- Services promised included assistance for installation, maintenance and training.

IT or Telecoms services that would facilitate efficiency:

- Of the schools respondents, interactive boards were the most needed facility, while the clinics mostly needed computers and telephone lines.
- Other requests included access to the internet, VoIP, wireless connectivity, email, WAN, private networks, and data projectors.

IT or Telecoms services respondents' procurement next year:

- An overwhelming number of respondents indicated that there would be no funding for any IT or telecoms services in the next year.
- The balance of respondents listed computers, fax machines, internet access, interactive boards, VoIP, WAN, software upgrades, printers and PABX.

### ***IT skills***

- 25 respondents stated that the IT skills shortage has had no effect on them. Conversely, 22 respondents have been severely or strongly affected.
- A lack of expertise is the problem experienced by most respondents.
- Without qualified staff installations, networking, maintenance and repairs become other major issues, with funding and a lack of personnel listed as the main reasons for this.
- Respondents suggested the following areas in which government could assist with the IT skills shortage: The provision of training, training facilities and workshops was seen by most respondents to be government's role in assisting with the IT skills shortage. Other suggestions included making IT compulsory at school level, and offering bursaries.
- A number of respondents requested government to simply provide facilities with computers.
- 31 respondents said the Department of Education should be assisting with IT skills development, with other responses including the Departments of Labour and Health, SITA and local government.

## **Conclusion**

Schools and clinics in rural areas have much lower levels of ICT access and knowledge than urban schools and clinics. The general level of ICT access and usage is very low and problems abound if there is access.

There seems to be a serious lack of coordination between schools with regard to ICT infrastructure and services available.

Funding and ICT skills are a serious problem for both education and health institutions.

The lack of available ICT infrastructure and services as well as the necessary skills to maintain the equipment and level of knowledge of the responsible staff are a major problem for schools and clinics.

## **Primary research conclusions**

### **Overall conclusions:**

- The differences in ICT access and usage between urban centres and rural areas are marked.
- Available funding and ICT skills affect all sectors negatively.
- Broadband penetration is generally low.
- The vast majority of respondents from all sectors are interested in an Mpumalanga Provincial Government broadband network.
- Infrastructure problems and poor services levels are a serious problem for all sectors.
- For the health, education and government sectors there appears to be a serious lack of coordination.
- There are very few external ICT projects for the benefit of constituents.
- The power outages in 2008 were a major problem for the survey respondents and a number of respondents invested in alternative power sources. However, most respondents think that the issue was dealt with effectively and most respondents do not consider it a problem anymore.

### **Telkom**

A large proportion of respondents overall complained of telephone lines being down and slow repair times by technicians and poor service levels. Low level users tended to be more satisfied than higher end users; however it seems to be a problem across the board.

The fact that there is no competition for Telkom in Mpumalanga is also an issue for respondents as they do not have a choice but to use Telkom, and this also means there is no price competition.

## Mpumalanga economic, socio-economic and ICT secondary research summary

The Mpumalanga high-level economic indicators are shown in the table below.

<b>Table 4 Mpumalanga economic indicators</b>	
<b>Indicator</b>	<b>Percentage</b>
% of SA population resident in Mpumalanga	7.4%
% of SA economically active population	6.8%
% GDP-R from Mpumalanga province	6.8%
Number of companies as a % of SA	4.0%
Large companies as a % of SA	2.0%
ICT business spend as a % of SA	3.0%

Source: BMI-T, 2009

### ***Economic highlights***

- GDP-R is driven by large infrastructure investment projects (mining, steel, electricity, SWC)
- Maputo Development Corridor (200 projects currently underway) has potential to increase production and export in manufacturing, especially stainless steel, automotive components, petrochemicals, food and wood products.
- Economic future will be affected by the global economic crisis, its reduced demand for resources and products, as well as a decline in tourism, the effect is likely to be muted by the nature of the infrastructural projects, which are driven largely by essential demand and government policy and funding.
- Growth in household consumption expenditure declined slightly in 2007 and expected to decline further due to interest rates and inflation.

### ***Business in Mpumalanga highlights***

- Only 4% of businesses are found in Mpumalanga
- The province's chief contributors to economic activity are currently mining (21%), manufacturing (18%), and financial services (11%), and to a lesser extent, retail and wholesale trade, which incorporates elements of tourism (9%), government (9%) and transport & communications (7%).
- Transport & communications had 6.0% average growth over the past eight years, with trade (4.6%) and construction (5.2%) also averaging good growth. Construction grew by 18% in 2007.
- About three percent of all business ICT spend is found in Mpumalanga - this amounted to close to R2.8bn in 2007, with R1.2bn being IT spend and R1.6bn being telecoms spend.

## ***District Municipality highlights***

- Mining predominates in the Nkangala district, manufacturing is concentrated in the southern district of Gert Sibande, while tourism is a focus of the Ehlanzeni district

## ***Industry sector highlights***

### Consumers:

- Almost 60% of population lives in rural areas, mostly women and children - Mpumalanga Rural Development Programme started in 2001

### Health:

- Approximately 11.2% of Mpumalanga's population is covered by medical aid, well below the national average of 13.7%.

### Education:

- The adult literacy rate in Mpumalanga was 81.5% in 2006, well below the official national average of 87.5%
- According to the 2007 National Education Infrastructure Mgmt System Report, 46.8% of schools in the province are dependent on a cellphone only for communication, while 49.4% have a landline connection

### Government:

- Mpumalanga Growth Fund in planning phases, to provide funds for economic growth
- PPP policy adopted to assist in fast tracking service delivery & infrastructure development. Spending on the infrastructure grant amounted to R413,295 million end Jan. 2008
- "Big Five" flagship projects: Maputo Development Corridor, Moloto Rail Development Corridor, Initiative to revitalize Tourism and Greening the province through conservation management, Water for All Flagship Project (WAFP), Capacity building of managers

### Potential for development through new initiatives:

- Maputo Development Corridor: South Africa, Mozambique and Swaziland have promoted the revival of the Maputo Corridor with policies and PPP investments designed such as the extension of the commercial border hours, the bilateral commitment to the one-stop border post, the co-operation between Mozambique Ports and Railway Company (CFM) and Spoornet on the rehabilitation and stabilisation of the rail-line, and the increase in shipping lines calling direct at Maputo on their Far East services.
- Three new development corridors have been identified in Gert Sidande District Municipality: the N17/N2 Development Corridor (Leandra to Piet Retief), N11

Development Corridor from Pixley Ka Seme to Albert Luthuli, and the N2 Development Corridor.

- In Nkangala, identified seven anchor projects are being developed: Catalytic Converter, Truck port/Logistics Hub, Multi Purpose Community Centres, Agro-processing, Convention Centre, Moloto Corridor Rail System, Highlands Gate and Estate Development.
- Mining: Electricity expansion projects are fuelling the demand for coal. There are about 18 mining projects underway, both new mines and expansions of existing mines, mostly in coal and platinum.
- Opportunities for development
- Manufacturing: the major opportunities are for beneficiation of locally available raw materials and intermediate products. Examples include:
  - Stainless steel production of products such as pipes and tubes, hollowware, cutlery, catering equipment and catalytic converters.
  - Beneficiation of chemical byproducts and feedstock from Sasol, AECI, etc.
  - Beneficiation of agricultural products, both food (afro-processing, canning) and non-food (furniture, building materials, wool and cotton textiles and clothing)
  - Beneficiation of mining and mineral products (tiles, architectural stones, tombstones, jewellery)
  - Further beneficiation of finished products such as paper into packaging, printing, and publishing.
  - Biofuels – the production of ethanol from maize

### ***New market players to watch***

- Neotel
- Second-tier players – Vodacom and MTN
- Other alternative operators – iBurst, VOX
- Infraco
- Provincial and Municipal Networks
- Sentech, USALs

### ***Issues and opportunities in the Mpumalanga provincial government specifically related to ICT***

- Lack of competition in the ICT environment (i.e. Telkom monopoly) is seen as being extremely negative for ICT development.



- The Mpumalanga provincial government needs to take note of globalisation. In other words, in terms of, an information economy, information society and information infrastructure.
- Government should find a better way of spending its ICT budget with regards to viability and cost of using ICTs.
- Quality of training is a major concern and IT training is not currently regulated.
- The Mpumalanga provincial government in partnership with the Universal Service Agency should be addressing the ICT needs of the previously disadvantaged communities. The needs of these communities should be met. Those needs that are limited to the provision of infrastructure should not only be met but should also address other needs such as training. The internet and related technology can be used to solve the education and skills shortage problem.

### **ICT spend**

- At R2.8bn, business ICT spend in Mpumalanga is 3% of the national total, with 43% being IT spend and 57% telecoms.
- 45% of IT spend is on hardware, and 36% on services.
- 53% of business telecoms spend is on fixed voice, 43% on mobile, and 9% on internet access. Other data communications make up the balance of 18%.
- 26% of business CIT spend originates from companies with over 1000 employees, and 42% from companies with between 50 and 1000 employees.
- Government spend on ICT for 2008/09 in Mpumalanga is R262,113,000.
- At R127 million, communications expenditure amounted to 49% of the total Mpumalanga provincial government's ICT budget in 2007.
- The CAGR of government spend for the period 2006 to 2011 is 11.9%, constituting 10.2% for hardware, 9.7% for software, 16.1% for services and 9.7% for communications.

### **ICT expenditure within Mpumalanga provincial government**

- Mpumalanga provincial government's ICT budget is about 7.5% of the total SA provincial budget

<b>Table 5</b>	
<b>ICT expenditure within Mpumalanga provincial government (R'000)</b>	
	<b>2008/09</b>
Mpumalanga	262 113
SA Total	3 475 754

Source: SA Treasury, BMI-T's Provincial and Local Government Report, 2008

## **South African ICT market size**

- IT market (hardware, software and services) = R65 billion
- Telecoms market (fixed and mobile voice, and data, and alternative players) = R 126 billion
- Total SA ICT market size = R191 billion

## **ICT projects and initiatives**

### *ICT at Provincial level*

- ICT strategy
- Broadband Strategy
- Compliance with SITA, ICT security

### *ICT in schools*

- Nepad e-Schools program
- Ligbron Wireless Interactive Smart Board
- ICT Centre in Emalahleni

### **Mpumalanga schools Provincial ICT Strategy**

- 45 schools were earmarked for the introduction of ICT
- each school has been allocated a total of 25 computers and ICT laboratory
- cost of R9.5 million
- rollout to another 150 schools from 2007 to 2009
- Ligbron Wireless Interactive Smart Board Teaching Methodologies partnership with ABSA and the Premier Science Education Award, will provide live transmissions of Mathematics, Science, ICT and Technology lessons to a group of schools in a 40km radius, and including support mechanisms
- a Science, Career Guidance & ICT Centre at Emalahleni Municipality, organised by the Education Department in partnership with Anglo Coal

### *ICT security*

- enhance their capabilities in forensic investigations
- create greater transparency and accountability for performance and computer auditing
- establish three units in the Premier's Office, namely, Forensic Audit, Performance Audit, and Computer Audit

### *Mpumalanga District Municipal IDP ICT*

- Compliance with e-Government initiatives and the Electronic Transactions and Communication Act
- GIS, EDMS, Intranet, Website, financial and HR and project management systems and other systems.
- Disaster recovery, VOIP.

### ***District ICT targets and objectives***

#### *Gert Sibande*

- implement a GIS system linking the local municipalities
- maintain and optimise IT hardware and software installations

#### *Ehlanzeni*

- the provision of public phones to all communities
- Provide communication services to communities / villages without efficient transport and communication services
- ensure proper functioning of MPCCs (Thusong centres), for 15 communities in the district
- install a computer centre for 58 schools

#### *Nkangala*

- develop a media centre
- ensure operationalisation of GIS
- feasibility studies on the viability of a Voice over IP system
- develop and implement a skills development plan
- investigate the development of the NDM gateway
- update the Electronic Document Management System
- plan and develop the establishment of more Thusong centres, and encourage private funding
- To give employees access to local networks and the public internet
- maintain and optimise use of existing ICT systems

## ***SA ICT dynamics***

Policy and regulatory dynamics

- ECA

Market dynamics

- Convergence
- Services based competition
- Infrastructure sharing
- Promote facilities-based competition as a primary goal.

## **5. STRATEGIC RECOMMENDATIONS**

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The section below will recommend economic opportunities which will increase economic growth and the possible value chain on both the up-stream and down-stream as well as the performance gaps and barriers that will have to be addressed to ensure successful implementation of IT and Telecoms development strategies.

### **ICT Value Matrix**

The figure below illustrates the possible value chain of government intervention in assisting ICT across different sectors. The initiatives on the left will determine the socio-economic impact as one goes to the right.

**Figure 3  
ICT Value Matrix**

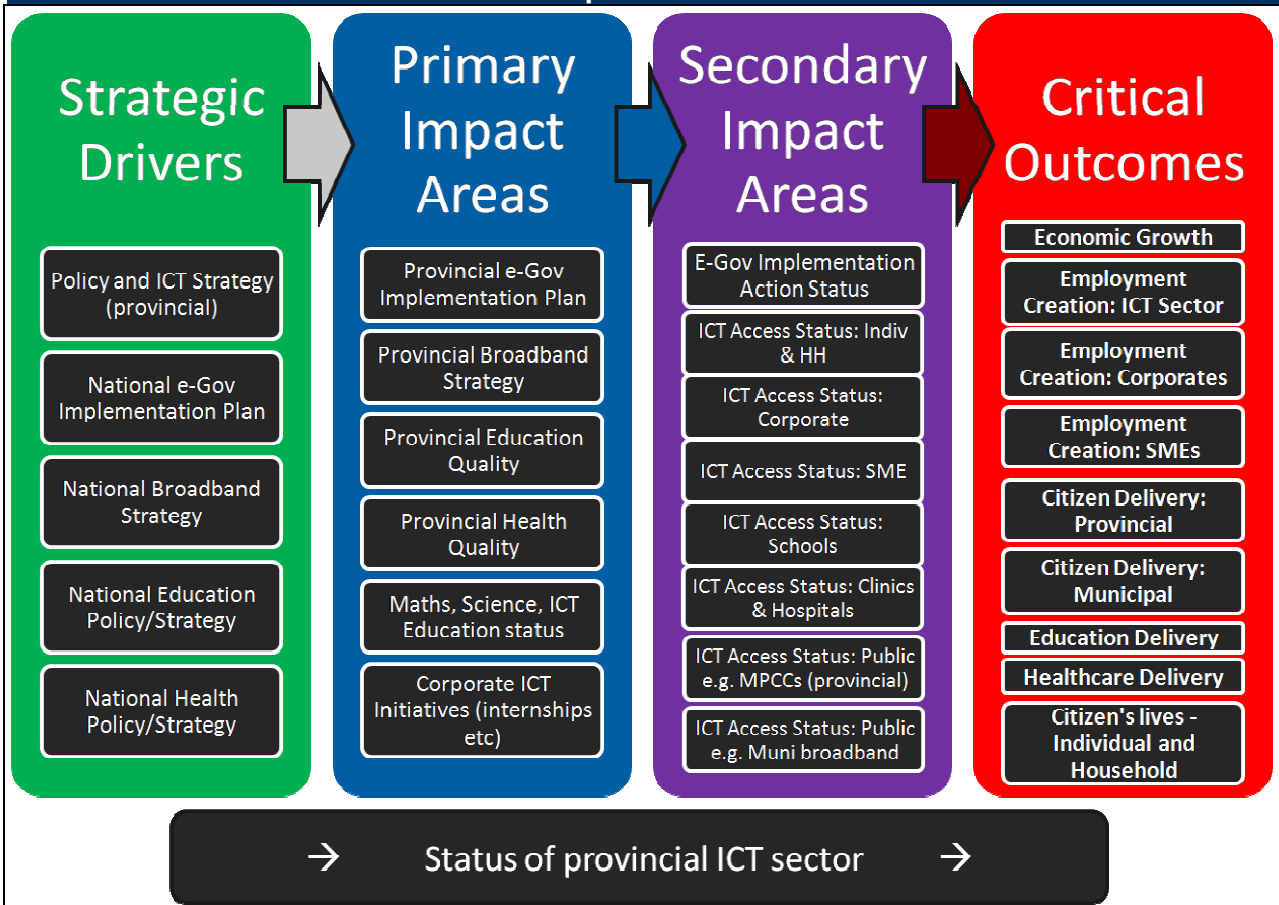
<b>Sectors</b>	<b>Individual and Households</b>	ICT strategy	e-Gov Implementation plan	ICT Access and usage	ICT skills	Employment creation	Improve livelihood of citizens
	<b>Corporates</b>	ICT strategy	e-Gov Implementation plan	ICT Access and usage	ICT skills	Economic Efficiency and Competitiveness	Employment creation
	<b>SMEs</b>	ICT strategy	e-Gov Implementation plan	ICT Access and usage	ICT skills	Economic Efficiency and Competitiveness	Employment creation
	<b>Schools</b>	ICT strategy	e-Gov Implementation plan	ICT Access and usage	Maths science, ICT education	Economic Efficiency and Empowerment	Improve educational delivery
	<b>Hospitals &amp; Clinics</b>	ICT strategy	e-Gov Implementation plan	ICT Access and usage	ICT skills	Economic Efficiency	Improve Healthcare delivery
	<b>Provincial Government</b>	ICT strategy	e-Gov Implementation plan	ICT Access and usage	ICT skills	Economic Efficiency	Improve citizen delivery
	<b>Municipalities</b>	ICT strategy	e-Gov Implementation plan	ICT Access and usage	ICT skills	Economic Efficiency	Improve citizen delivery
	<b>ICT Sector</b>	ICT strategy	e-Gov Implementation plan	ICT Access and usage	ICT skills	Economic Efficiency and Competitiveness	Employment creation
		<b>Policy and regulations</b>	<b>Implementation plans</b>	<b>Technology</b>	<b>Knowledge and Skills</b>	<b>Economic</b>	<b>Social</b>
<b>Impact Value Chain</b>							

Source: BMI-T 2009

### Impact Model

This can be further unpacked in the form of an impact model, as illustrated below. For ease of concept development, we have separated out the strategic drivers and key outcomes from the intermediate (primary and secondary) impact areas. It is possible to use this approach to represent the direction of impact of different combinations of strategic actions on the various impact areas. It is also possible to use a numeric scoring approach to give a sense of relative magnitude of these actions, and this approach has also been developed in embryonic form. A more scientific model consisting of performance indicators, and compound indices of these indicators, could form part of a possible follow up project, which would also serve to track progress against specific objectives.

**Figure 4  
Impact Model**



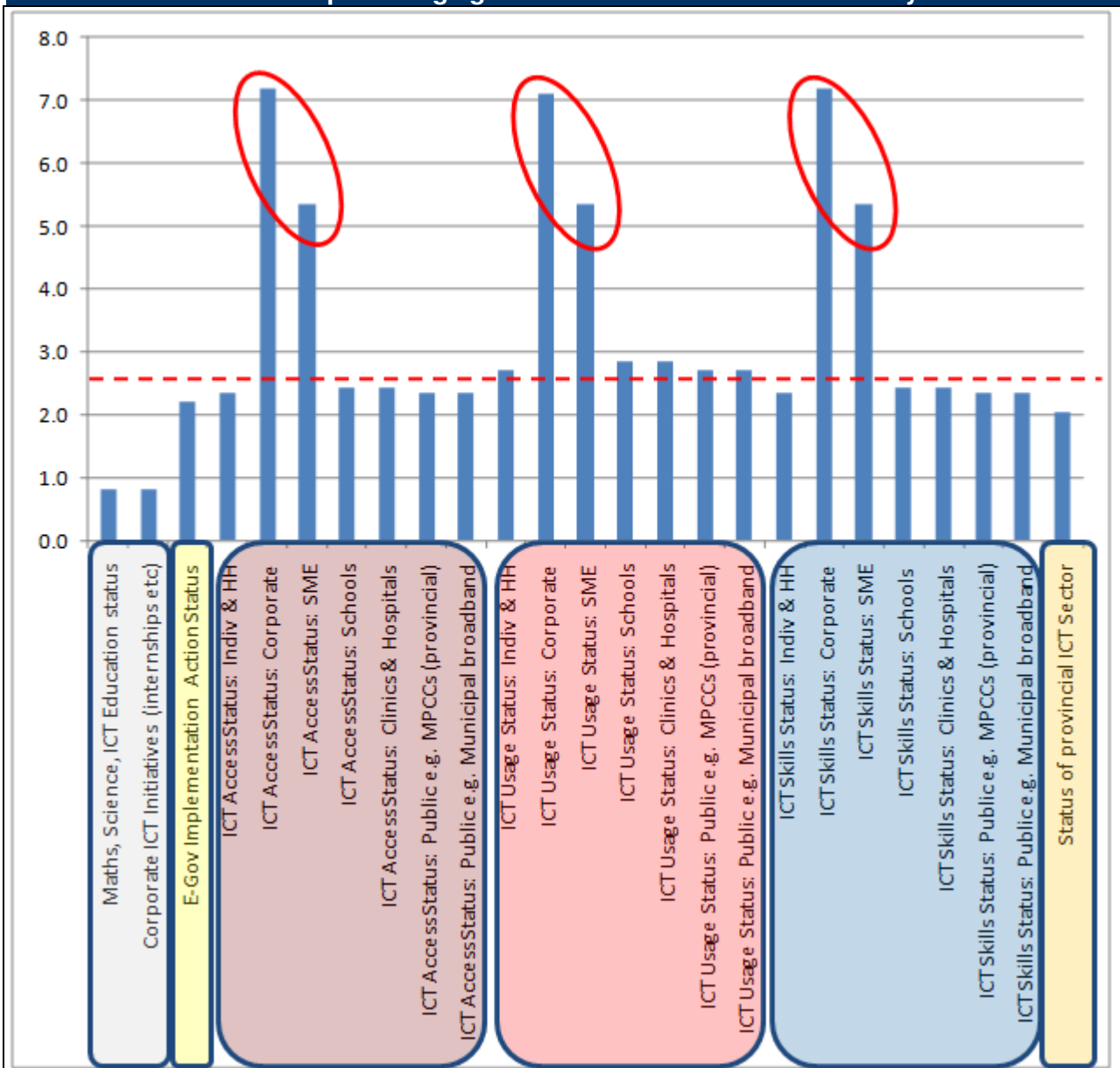
Source: BMI-T, 2009

### Possible scenarios

The figures below illustrate different scenarios, the outcome differing for each combination of strategic drivers in place. Apart from general, wide-ranging ICT initiatives at either national or provincial level, we have also singled out Education and Health in respect of strategic ICT initiatives that may emanate from within these departments themselves. An example of such an initiative in the education arena would be the GautengOnline initiative to put PCs and internet access in all public schools in Gauteng.

Note that the status of the provincial ICT sector has been singled out, being considered sufficiently important to track as both an intermediate impact area (with impact on other areas such as education, economic growth etc) and as a potential key outcome area in its own right.

**Figure 5**  
**Baseline scenario A – Mpumalanga government does not embark on any ICT initiatives**



Source: BMI-T 2009

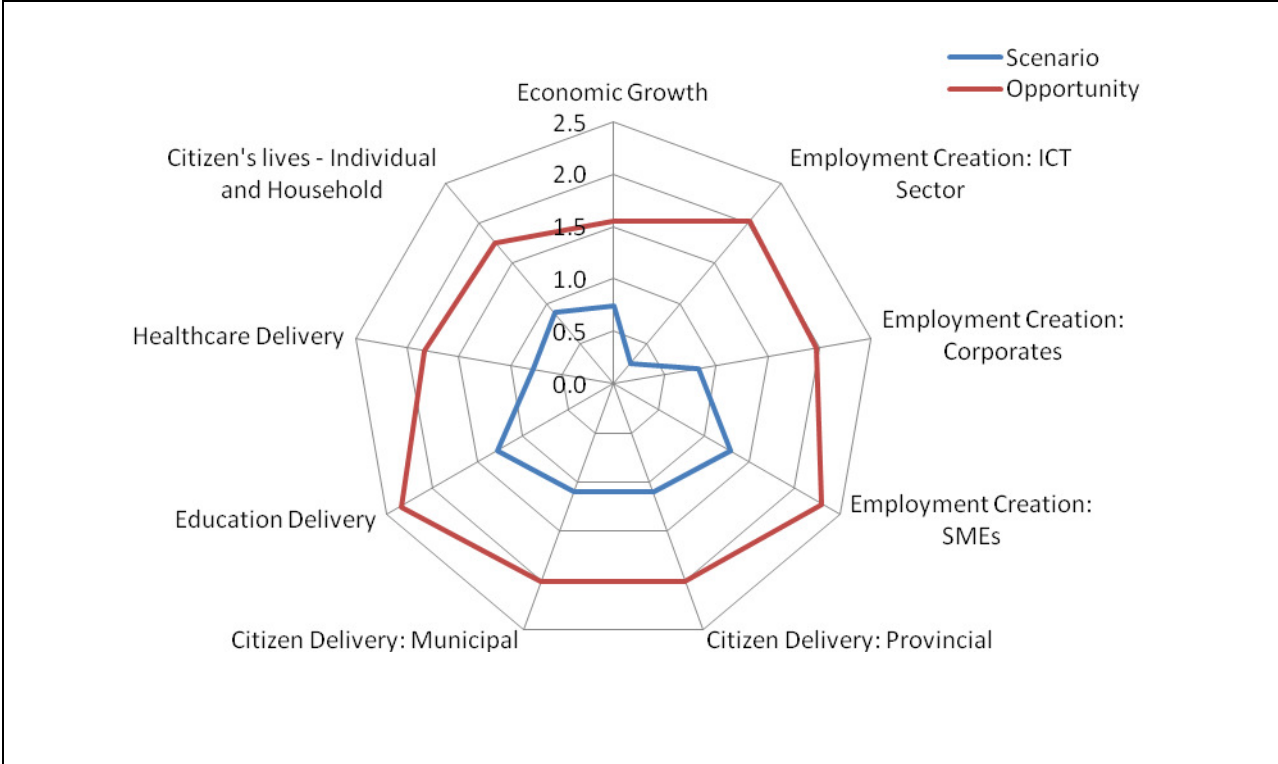
The assumptions of scenario A are:

- No national or provincial ICT or broadband strategies in place
- No national or provincial eGov implementation plans in place
- No change in national education and health policy and strategies
- No change in provincial education and health budgets and management
- Status quo corporate ICT initiatives (learnerships etc.)

What is implied in the above scenario is a 'status quo' situation, in which there are neither any new ICT initiatives from the Education and Health departments themselves nor any

provincial or national ICT strategies or initiatives. This is represented as 'Scenario' in the centre of the chart below (relative scoring is dimensionless and thus indicative only). Illustrated below is a radar diagram with axis labels representing the 'key outcomes' in the impact model. The outer line labeled 'Opportunity' represents the maximum impact of all initiatives in combination, i.e. broad-ranging ICT initiatives and departmental (education and/or health) initiatives working in harmony. It thus represents a desired state, that could be aspired to, and which will not necessarily materialise in practice, since optimal co-ordination between all stakeholders may be difficult to achieve. Other constraints could include limited budgets and insufficient management skills needed to execute the strategy effectively.

**Figure 6**  
**Baseline scenario A opportunity grid – Mpumalanga government embarks on no ICT initiatives**

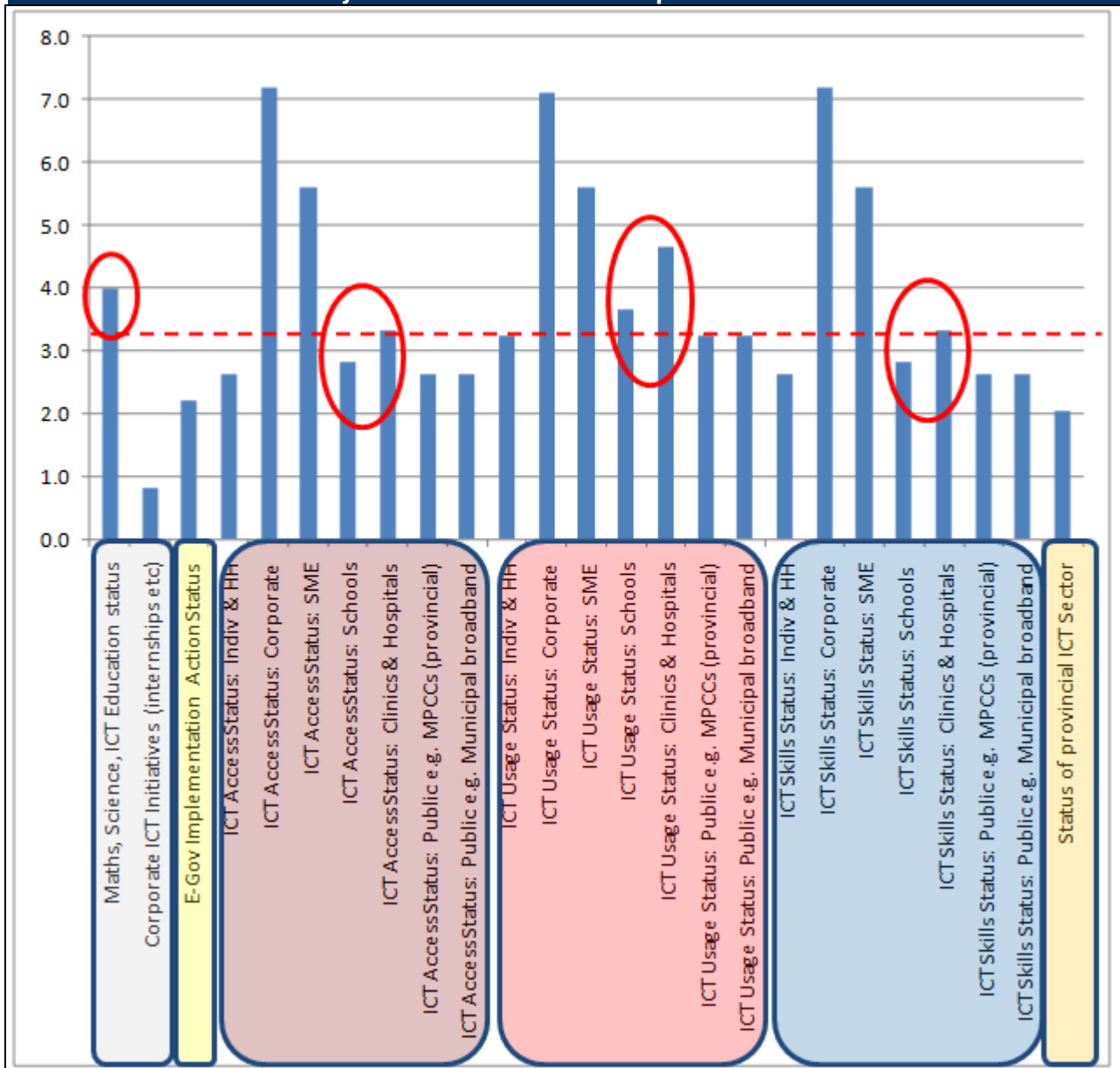


Source: BMI-T, 2009

What is immediately evident from the chart above is that the largest opportunities, in terms of all the parameters included as 'key outcomes' in the model, lie in Education and Employment Creation



**Figure 7**  
**Scenario B – only education and health department internal initiatives**

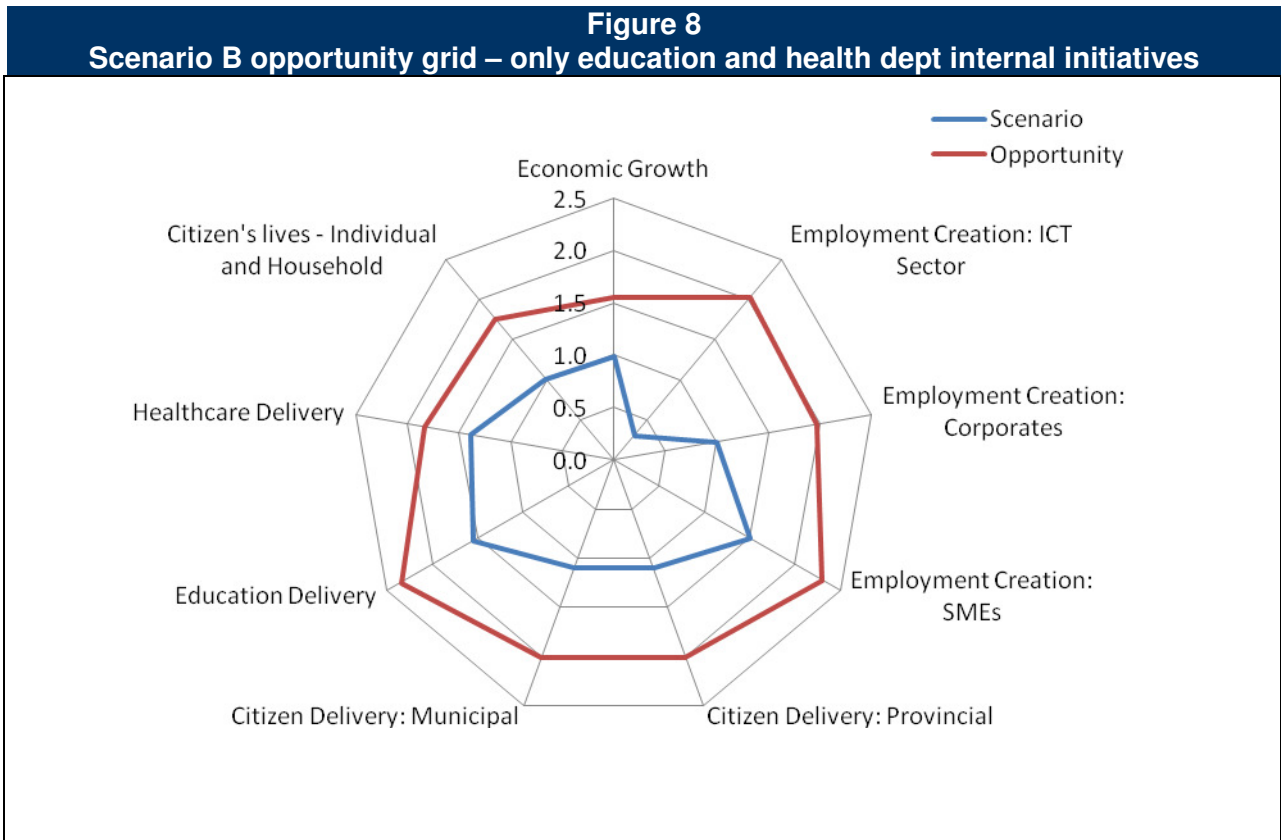


Source: BMI-T 2009

The assumptions of scenario B are:

- No provincial ICT strategy in place, no national e-Gov implementation plan or Broadband strategies
- No resultant development in provincial e-Gov, Broadband plans
- Also no resultant improvement in corporate ICT initiatives (learnerships etc)
- Maximum ICT benefit from Health and Education policies and strategies

- Resultant improvement in provincial Health and Education budgets, management etc

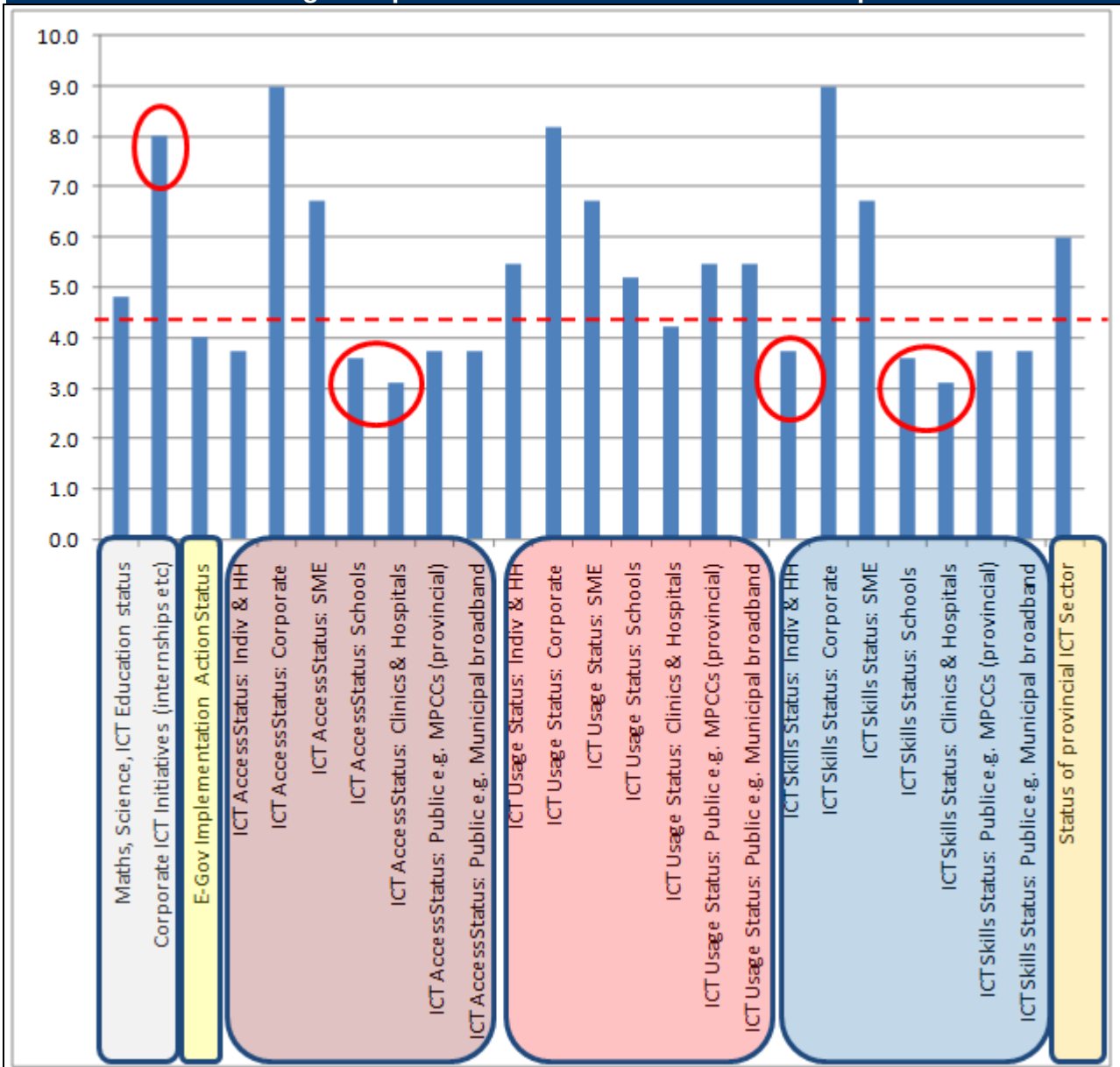


Source: BMI-T 2009

Scenario B may be considered to be theoretical, but is included here to illustrate the possible impact that could be achieved by departmental initiatives (such as the GautengOnline example already mentioned) in the absence of a well-orchestrated, broad-ranging ICT strategy for the province. What is achieved is a limited/partial impact on ICTs contribution towards education and health delivery.

Another example could be the building of a university campus in the province, which in turn could be used for extension work in schools, including ICT implementation and content.

**Figure 9**  
**Scenario C – ICT strategies in place without education and health dept internal initiatives**



Source: BMI-T, 2009

The assumptions of scenario C are:

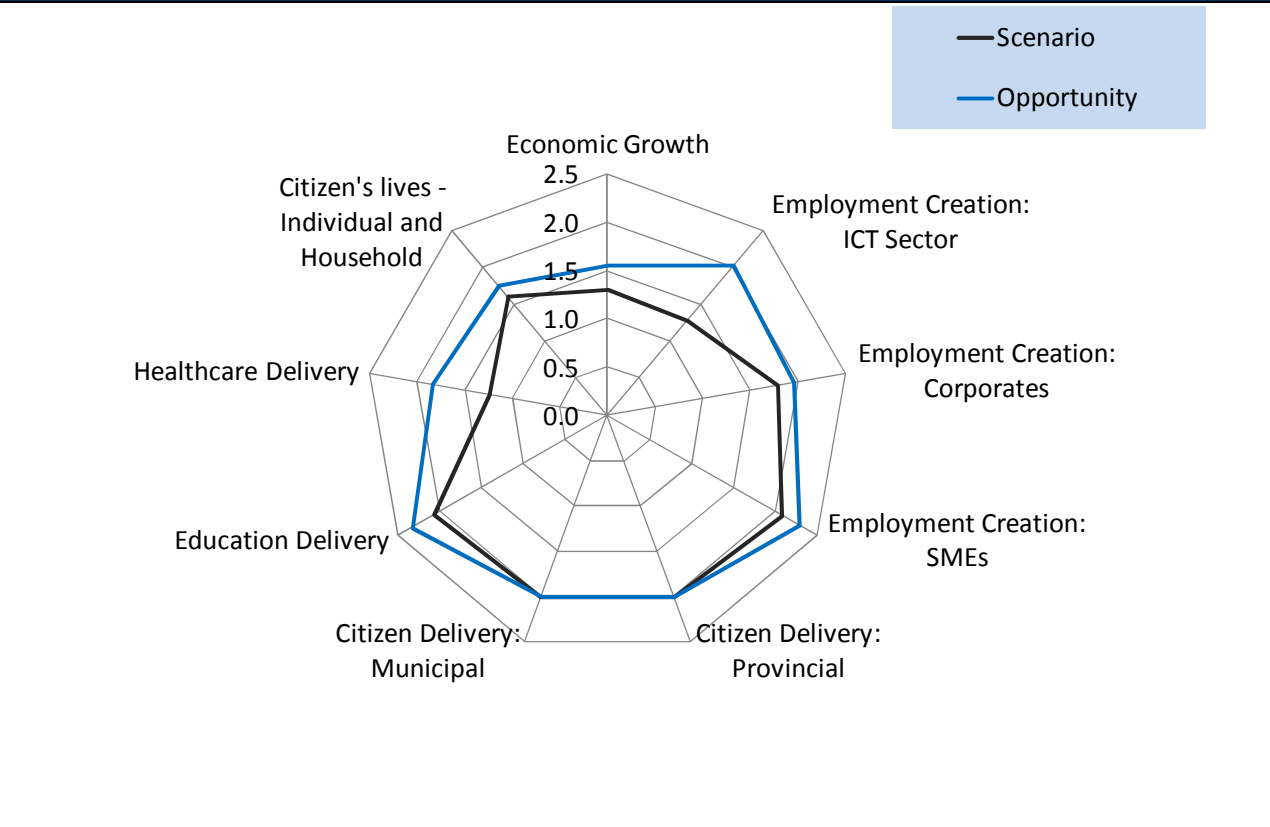
- Provincial ICT strategy in place, supported by national e-Gov implementation plan and Broadband strategies
- Resultant development in provincial e-Gov, Broadband plans
- Also some resultant improvement in corporate ICT initiatives (learnerships etc.)
- No change in national Health or Education policy or strategy
- No change in provincial Health or Education budgets, management etc.

This scenario may also be considered theoretical, in that there are maximum provincial ICT initiatives (which in turn are supported by national ICT initiatives), in this case we have assumed that there are no ICT initiatives from the education and health departments themselves, in other words once again there is no effective co-ordination between various stakeholders (as would be the ideal case, which is again represented here as 'opportunity'). However, it can be seen that, when compared against Scenario B, the overall impact on the 'key outcomes' in this case is larger (even on specific impact areas like education), and there is also a much wider range of impact areas. There is also a noticeable direct impact on e-Government outcomes at both provincial and municipal levels - expressed here as 'Citizen Delivery'.

Citizen delivery at provincial level could include the provision of access to ICTs in general, and government portals specifically, for example through MPCCs, cell phones etc. This would not constitute a stand-alone benefit, since such an initiative could, in turn support initiatives in other areas such as agriculture, as just one example, the creation an e-agriculture portal to assist farmers, especially in rural areas, for dissemination of information in order to provide ready access to comprehensive, up-to-date and detailed knowledge and information, as well as opportunity to market and sell their produce on line. (e.g. Kenya agriculture commodity exchange, KACE).

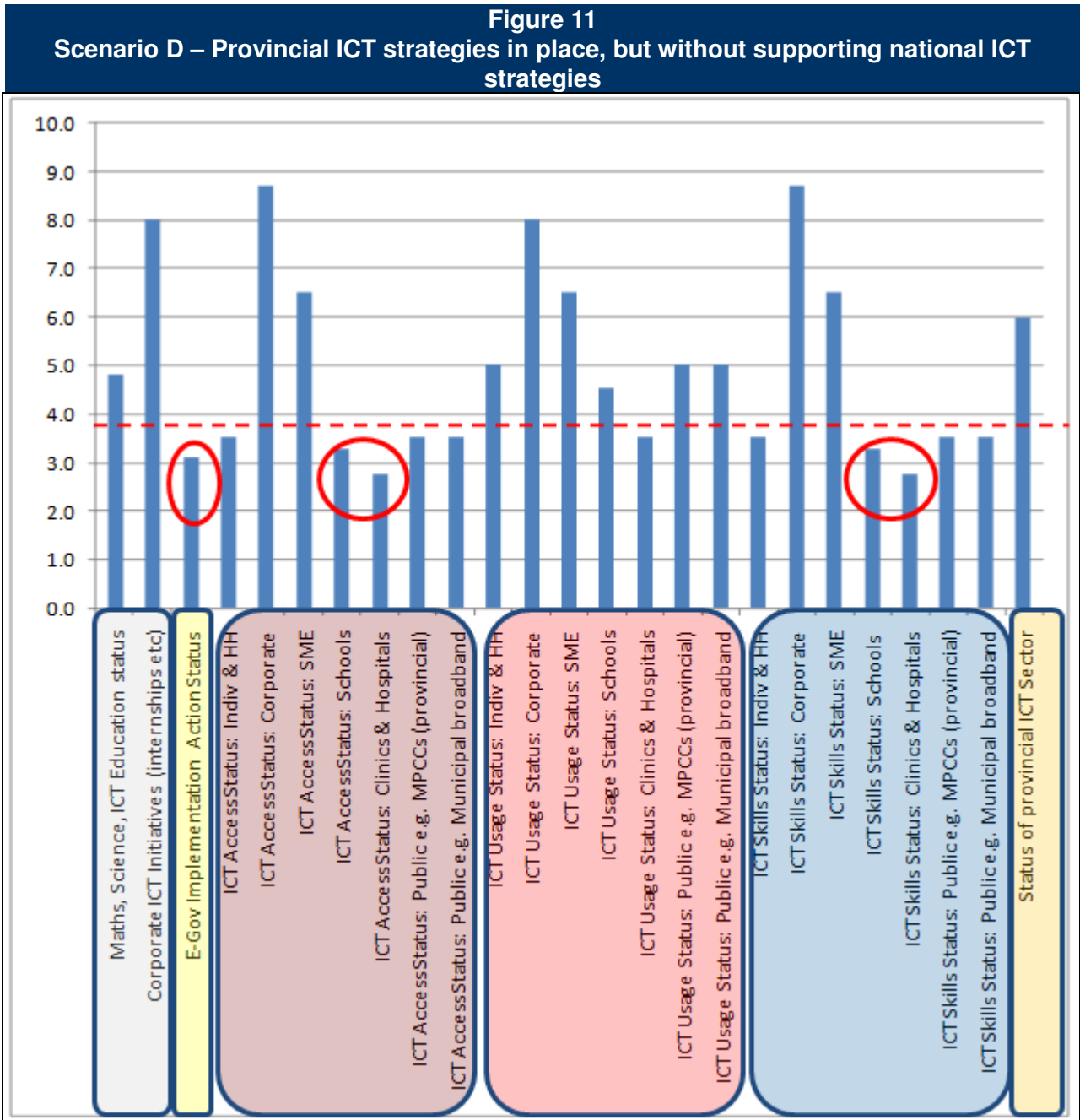
An example of citizen delivery at municipal level could include the deployment of government built (and owned) shared broadband infrastructure at municipal level. This, in turn, could support various PPPs with ECS licensees to offer commercial services to citizens, including cheap internet access and telephony services.

**Figure 10**  
**Scenario C opportunity grid – ICT strategies in place without education and health dept internal initiatives**



Source: BMI-T, 2009

It is also interesting to note that there is a strong impact on the status of the provincial ICT sector itself in Scenario C, which was not nearly as evident in Scenario B.



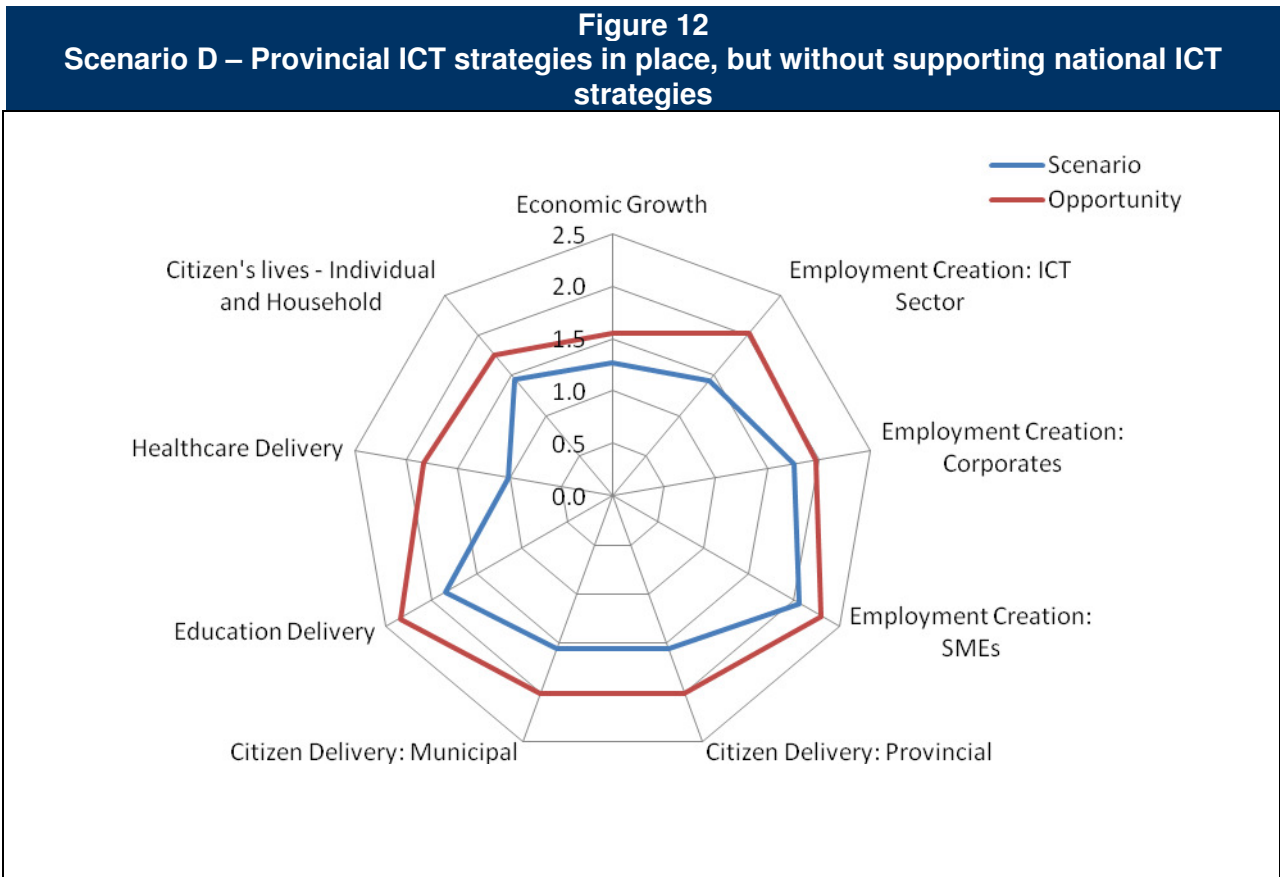
Source: BMI-T, 2009

The assumptions of scenario D are:

- Provincial ICT strategy in place, but no national e-Gov implementation plan and Broadband strategies
- Resultant development in provincial e-Gov, Broadband plans

- Also some resultant improvement in corporate ICT initiatives (learnerships etc)
- No change in national Health or Education policy or strategy
- No change in provincial Health or Education budgets, management etc

The final scenario developed below is actually a variation on Scenario C, with the main difference being the absence of any national ICT initiatives that may be exploited to support the provincial ICT initiatives. As with the other scenarios, this would be an extreme case, and may be considered to be theoretical. However, it illustrates the power of provincial ICT strategies to make considerable impact on the key outcome areas, in spite of the lack of support at the national level, and also in the absence of any change in the specific ICT initiatives within the specifically itemised departments of education and health themselves. In a real world situation, these extremes would not be found, but some combination of initiatives at national and provincial level would be evidenced, and some degree of harmonisation between the various stakeholders would be in effect.



Source: BMI-T 2009

- Similar to Scenario C but impact is lower in some areas, notably eGov, Education and Health
- Examples are: All schools get broadband connectivity, all clinics have internet access and creating e-tourism and e-agriculture portals

## **Major ICT gaps**

The major gaps in Mpumalanga discovered during the research process are discussed below.

### ***ICT skills***

There is a major gap in Mpumalanga in terms of available, well-trained ICT technicians, both for basic and high-level ICT skills for the public and private sectors.

There is also a lack of education and knowledge amongst citizens in how to use ICT equipment, specifically computers.

The other major problem is poor service received with regard to telecoms and IT and slow repair times.

### ***ICT infrastructure***

There are massive problems with regard to ICT infrastructure in Mpumalanga. Things like power outages, telephone and internet lines being down are major problems for all sectors surveyed. Once the infrastructure is down it also takes a long time for the infrastructure to be available again, and this relates back to the ICT skills problem mentioned above.

For schools and clinics the problems extend to them not having basic level ICT at their organisation, not just that the infrastructure is down for whatever reason.

The differences between rural and urban areas are marked in terms of ICT infrastructure and services availability.

### ***Funding***

Available funds are a major hindrance with regard to ICT for all sectors, including government, schools, clinics, hospitals, ICT providers (specifically the smaller Mpumalanga ICT providers) and SMEs.

## **Recommendations**

The table below shows the recommendations which have been drawn based on the extensive secondary and primary research conducted. In order to ensure compatibility with current provincial initiatives, the recommendations are categorised according to the Mpumalanga provincial growth and development strategy which was updated in 2008.

Key themes were listed as:

1. Agricultural development
2. Skills Development
3. Economic growth and job creation
4. Investment in strategic infrastructure
5. Environmental Sustainability
6. Tourism, biodiversity and cultural heritage
7. Energy and mining

8. Social Cohesion

9. Public Service Delivery

10. Cooperative Governance

Wherever applicable to the scope of this study, which focused on ICT in businesses, government, schools, clinics and ICT providers, recommendations have been included as per the format of the Mpumalanga provincial growth and development strategy.



**Table 6  
Recommendations**

<b>Themes</b>	<b>Sub-themes</b>	<b>Recommendations</b>
1.Agricultural development	-Agro-value chain centres (agro-processing, supplies)	Create an e-agriculture portal to assist farmers, especially in rural areas, for dissemination of information in order to provide ready access to comprehensive, up-to-date and detailed knowledge and information, as well as opportunity to market and sell their produce on line. e.g. Kenya agriculture commodity exchange (KACE)
2. Skills Development	2. Skills Development	ICT Centres of excellence to address targeted skills needs. Establishment of a university or an ICT training centre in Mpumalanga Province. Sustainability of these initiatives will be best to be done in a PPP model. Co-operate with ISETT SETA to bring more ICT training to Mpumalanga. Offer bursaries to students to study ICT related courses.
2. Skills Development	-Quality of education across all levels	Co-operate with Department of Education to: create more FET's that specialise in technology intensive education; support schools with computer infrastructure and services.
2. Skills Development	-Science centres	Co-operate with the department of Science and technology to promote science and technology amongst schools and to provide support for a science centre focusing on ICT
3. Economic growth and job creation	-Economic development strategy – prioritising key economic sectors that have impact of job creation	Adequate ICT infrastructure support that focuses on the province's chief contributors to economic activity which are currently mining, manufacturing, and financial services, and to a lesser extent, retail and wholesale trade (which incorporates elements of tourism), government and transport & communications. Manufacturing is the single largest economic sector in Mpumalanga, contributing nearly a fifth to the GGP of the province.
3. Economic growth and job creation	ICT development	ICT Strategic initiative that is currently underway. Broadband strategic process has started. Investing in local ICT infrastructure, subsidising or incentivising independent companies to maintain systems and to offer training to staff members, employing more technicians, appointing specific IT personnel for each region and offering higher salaries to attract more highly skilled IT specialists
3. Economic growth and job creation	-SMME development (financial and non-financial support)	Empowering SMMEs in the use of technology to assist their businesses through co-operation with provincial SEDA initiatives, as well as other initiatives that address SMME's. Incentives for participating in learnership programmes. ICT training through MEGA and SEDA.
3. Economic growth and job creation	-Informal sector development	Inform, train and facilitate access to portals for marketing and e-commerce. Possibility of cellphone internet access.
3. Economic growth and job creation	-Promotion of trade and investment	Create conducive ICT infrastructure environment to encourage trade and investment in key areas like mining, manufacturing, and financial services,, retail and wholesale trade (which incorporates elements of tourism), and transport & communications

3. Economic growth and job creation	-Spatial development initiatives (MDC, MRDC)	Facilitate appropriate ICT infrastructure to support the different levels of Spatial Development. A-High levels of economic activity (potential) - high speed, capacity broadband infrastructure: B-High levels of poverty concentrations- Broadband community access points and multipurpose community centres; C- Area of combined poverty and economic activity- Combination of MPCCs and focused broadband connectivity in targeted areas. ICT to support Manufacturing Hubs industrial zones (light and medium industrial parks)
4. Investment in strategic infrastructure	4. Investment in strategic infrastructure	Security and ICT Infrastructure support for projects like Maputo Development Corridor projects. Industrial parks, like Witbank/Middelburg Industrial Park.
4. Investment in strategic infrastructure	-Roads	ICT to support transport projects like Truck port/Logistics Hub
4. Investment in strategic infrastructure	Rail	ICT support for Moloto Corridor Rail System (R2.4bn), Majuba railway siding project
4. Investment in strategic infrastructure	-Logistics and freight	The transport sector, at R9,693 million, contributed 7.0% of GDP in 2007.
4. Investment in strategic infrastructure	-Water and sanitation (addressing old and ailing infrastructure)	ICT support for electricity, gas and water projects which contributed R6,087 million to GDP, at a growth rate for the sector of 3.2%.
4. Investment in strategic infrastructure	Stadium- 2010	Mbombela stadium
4. Investment in strategic infrastructure	Power	Mpumalanga accommodates most of the power stations in South Africa. In fact Eskom's ten coal-fired power stations in Mpumalanga represent 68% of the total net maximum electricity-generating capacity of South Africa. ICT infrastructure support for projects like Kusile , Eskom's return-to-service project, Sasol gas-fired power plant, Arnot power station capacity increase project (ACIP), Matla power station upgrade
6. Tourism, biodiversity and cultural heritage	6. Tourism, biodiversity and cultural heritage	An e-tourism portal to support to encourage the development of tourist attraction facilities and centres (cultural villages, game reserves, art galleries, museums)
6. Tourism, biodiversity and cultural heritage	-Cultural tourism	Extend the current e-tourism portal set-up to include all SME tourism operators. Ensure that the less well known rural areas and routes have access to a portal to market resorts, events and sites and sell accommodation online. Examples include freeSATsite, a Microsoft and SA Tourism partnership providing assistance to small operators to develop and host websites. Province should provide encouragement and marketing to such SME operators to create the willingness to be trained. Use of, and training in, cellphone internet technology in the remote areas may be necessary. Sho't left is a campaign developed by SA Tourism to encourage domestic travel, and low cost tourist sites can be included on the extranet hosted by SA Tourism.
7. Energy and mining	-Renewable energy	Create an optional role for co-operatives in ownership structure of any new PPPs that are created.
7. Energy and mining	-Sustainable mining development	Assist with an e-mining portal that can assist these new entrants with information, and communications
7. Energy and mining	-Community ownership and	Assist with an e-mining portal that can assist these new entrants with information, and communications

	participation in mining development	
9. Public Service Delivery	-Integrated quality health care	Providing training, training facilities and workshops offering courses for staff on basic skills, maintenance and upgrading essentials.
9. Public Service Delivery	-Delivery of Basic services	Budgets to be made available for ICT-specific projects to benefit constituents in specific areas such as education and health and rural communities
10. Cooperative Governance	-Integrated development and spatial planning	ICT infrastructure to deliver services to major housing initiatives like the Highlands Gate and Estate Development (R850m)
Provincial broadband strategy includes a combination of fixed line infrastructure, towers and satellite connectivity. Province could buy capacity of satellite bandwidth and resell at cheaper rate downstream to smaller companies. Could lease bulk capacity from Telkom or co-operate one of the operators building their own fibre network and share infrastructure costs. ICT centre of excellence in Mpumalanga that is linked to a telecommunications operators or IT providers.		

Source: MPGDS, 2008 and BMI-T, 2009

## **6. APPENDIX**

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This section of the report shows the primary and secondary research detail. The recommendations being drawn from the primary and secondary research gathered are included in the overall recommendations and conclusions and are based on the detail provided in this section of the report.

## **7. BUSINESS SURVEY RESULTS**

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### **Introduction**

Three hundred (300) business surveys were conducted in Mpumalanga.

The primary research survey results are shown by sector, as the business surveys can be quantified, but the other sector surveys are used as qualitative inputs only to the overall purpose of the project.

Business surveyed include SMMEs (in urban and peri-urban areas), large and corporate companies.

The business survey results are shown below, grouped into the following sections:

- Demographics
- ICT access and usage
- IT and Telecoms issues
- IT skills
- IT and Telecoms growth and spend
- ICT wish list
- Broadband network
- The results from the ICT providers, government organisations and education, health and civil society organisations are summarised below the business survey section. As these surveys were done more from a qualitative than a quantitative point of view, they are summarised and at the end of the report the findings from all the surveys are summarised and recommendations made regarding the best way forward.
- The data is segmented as appropriate for each question; usually the following segmentations are useful: company size, geographic area (the 3 municipal districts) and industry sector.
- For segmentation purposes the industry sectors and company size brackets are grouped together as shown below to ensure that there is a big enough sample size for each group to make meaningful segmentations, as conclusions cannot be drawn from very small sample sizes.

- Due to some industry sectors having very small sample size, where segmentations are made using industry sector, the industry sectors are grouped together into the following groups to make the results more meaningful by having large sample sizes:

#### Primary and Secondary Industries

- Manufacturing
- Construction
- Agriculture, hunting, forestry and fishing
- Mining and quarrying
- Utilities

#### Financial and business services

- Financial intermediation, insurance, real estate and business services
- Transport, Storage and Communication

#### Retail, wholesale and other services

- Wholesale and Retail Trade
- Community, social and personal services

The company size breakdown for segmentation purposes is as follows:

- Small and medium businesses: 1-50 employees
- Large and corporate businesses: >50 employees

## **Demographics**

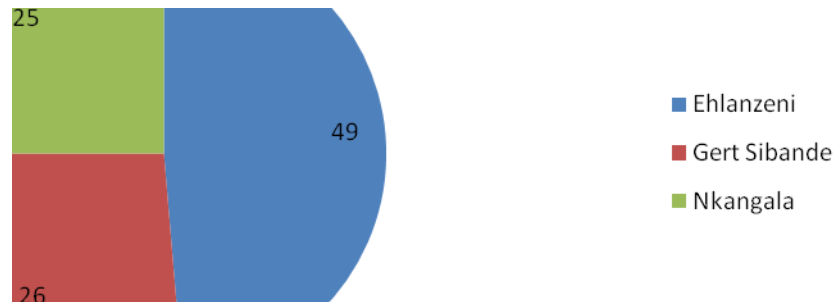
The demographics shows the breakdown of the industry sector, number of employees and knowledge workers, number of PCs/laptops and annual turnover of the companies surveyed.

The cities/towns where the businesses surveyed are situated are shown, as well as the municipal districts that the cities/towns are situated in.

### ***District Municipality***

The three district municipalities' splits for the business respondents are shown below.

**Figure 13**  
**District Municipality**



Source: BMI-T, 2009

As per our original specification for the splits to be done in the Mpumalanga province, which were determined by looking at the demographic splits of the province, Ehlanzeni district represents almost half the sample (49%) with the Gert Sibande and Nkangala districts being 26% and 25% of the sample respectively.

This breakdown is used in the segmentations of appropriate questions in the remaining sections of the report to highlight the differences between the 3 district municipalities.

The table below shows the cities and towns where the businesses surveyed are situated. Nelspruit, Middleburg and Ermelo are the three cities/towns with the most respondents.

**Table 7**  
**City or Town where respondent is situated**

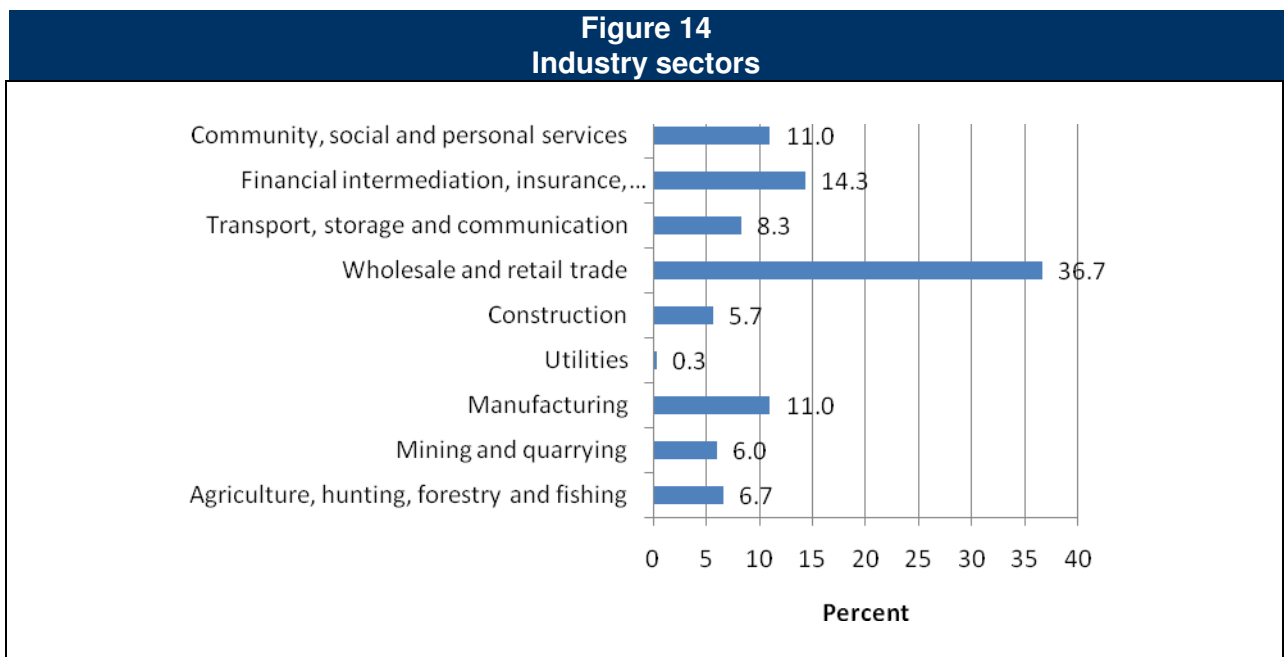
	Percent
Nelspruit	31.7
Middelburg	12.3
Ermelo	7.7
Bethal	6.7
Witbank	5.7
Kriel	4.7
Barberton	3.3
Hazyview	3.3
Balfour	3.0
Kanyamazana	3.0
Lydenburg	3.0
White River	2.7
Amsterdam	1.7
Piet Retief	1.7
Badplaas	1.7
Volksrust	1.7
Carolina	1.3

Ogies	1.3
Kaapmuiden	0.7
Waterval Boven	0.7
Delmas	0.3
Kabokweni	0.3
Kamlushwa	0.3
Malelane	0.3
Secunda	0.3
Standerton	0.3
Trichardt	0.3
Total	100

Source: BMI-T, 2009

### **Industry sector**

- The industry sector breakdown of the companies surveyed is shown in the figure below.

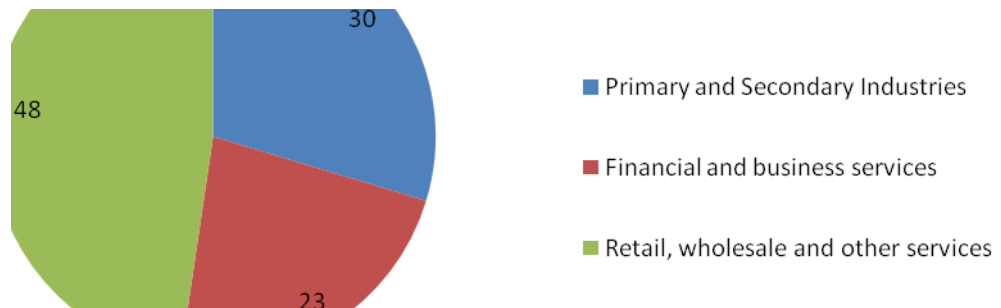


Source: BMI-T, 2009

More than a third of the respondents are in the wholesale and retail trade sector, manufacturing and community, social and personal services are the next biggest sectors with 11% each.

- The industry sector breakdown for segmentation purposes is shown below.

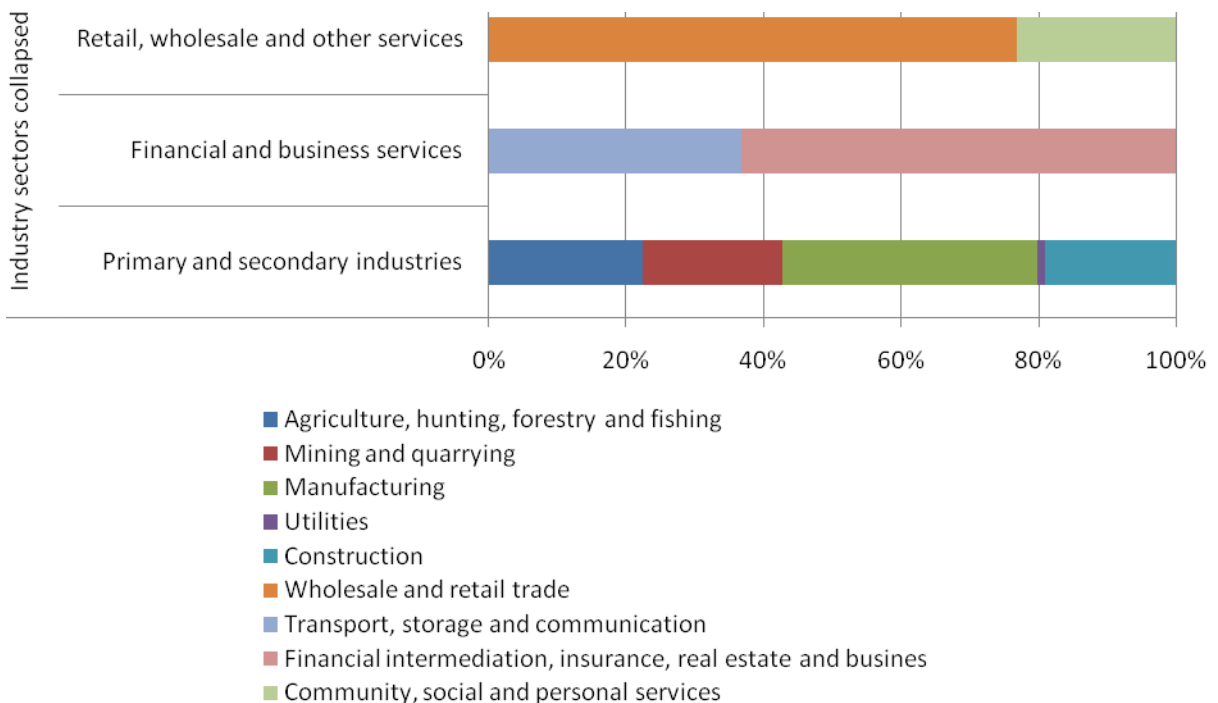
**Figure 15**  
**Collapsed industry sectors**



Source: BMI-T, 2009

Almost half the businesses (48%) are in retail, wholesale and other services, followed by businesses in the primary and secondary industries at 30% and 23% are in financial and business services sectors.

**Figure 16**  
**Collapsed industry sector breakdown**



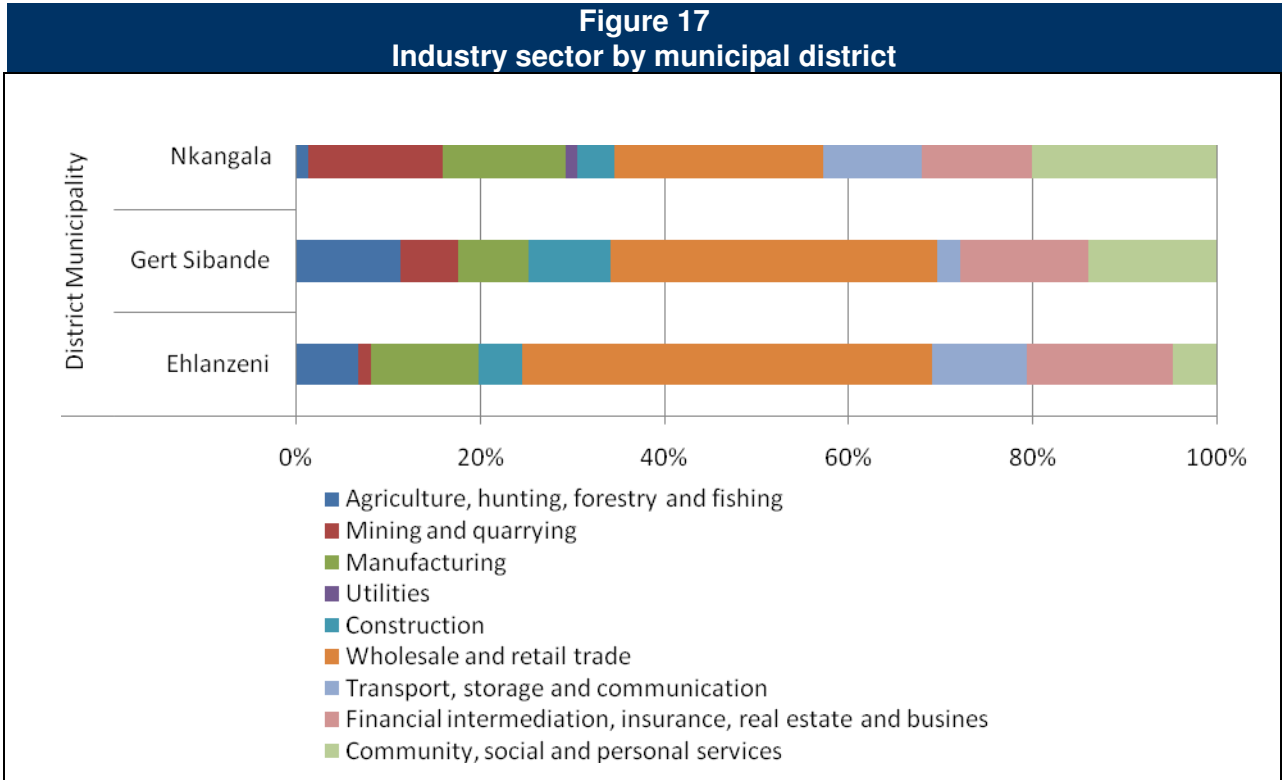
Source: BMI-T, 2009

The figure above shows a breakdown of the proportion of the industries forming the three collapsed groups.



Segmentations

The figures below show segmentations of industry sector by district and company size.



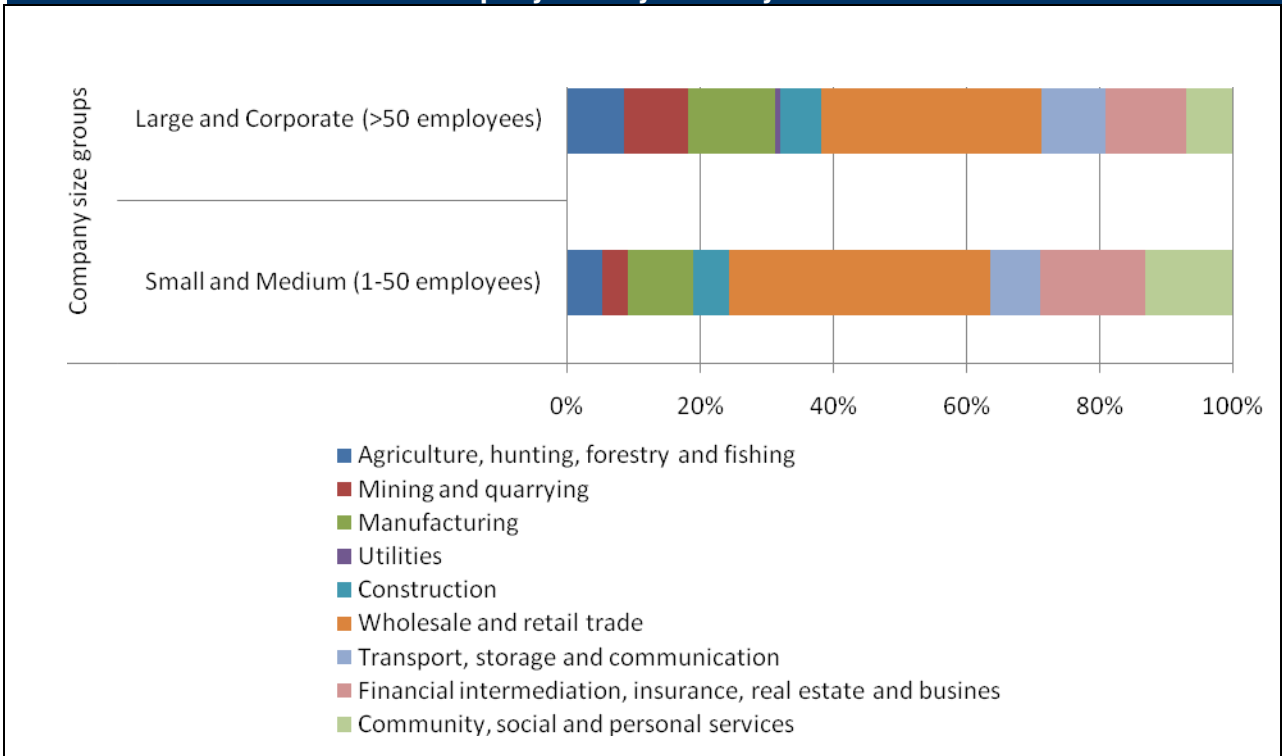
Source: BMI-T, 2009

In Ehlanzeni wholesale and retail trade, followed by financial intermediation, insurance real estate and business services have the highest proportion.

In Gert Sibande there are more agriculture, hunting, forestry and fishing and construction companies than in the other districts.

In Nkangala there are more mining and quarrying and community, social and personal services than in the other districts.

**Figure 18**  
**Company size by industry sector**



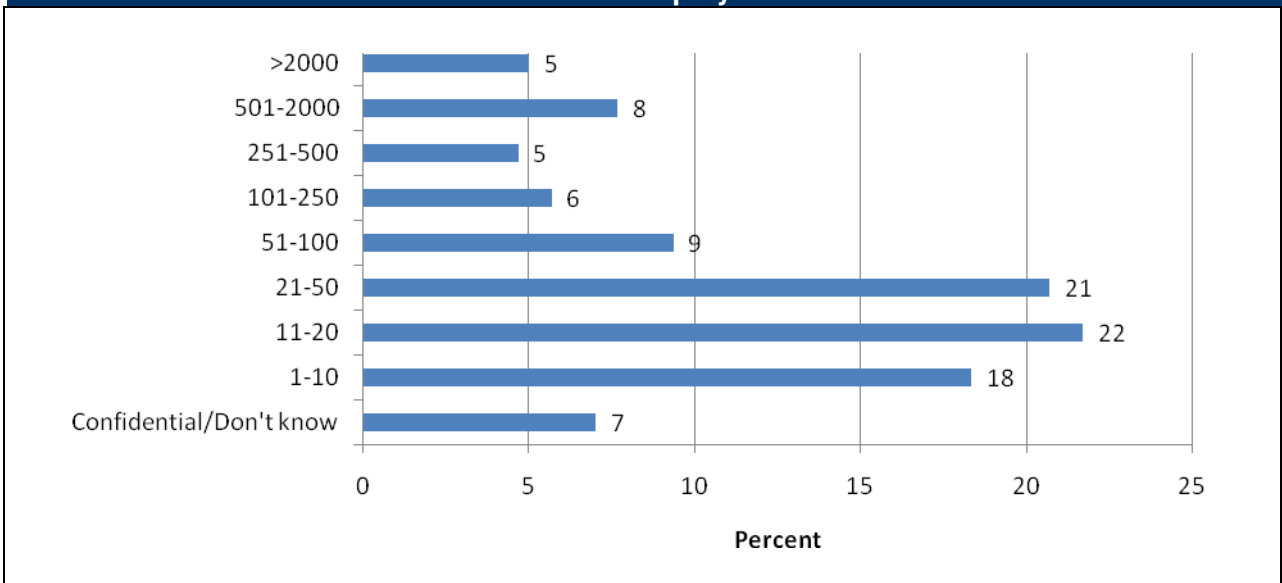
Source: BMI-T, 2009

There are no utilities in the small and medium group and the wholesale and retail trade and financial, intermediation, insurance, real estate and business services proportion is higher.

**Number of employees**

- The total number of employees and knowledge workers are shown below.

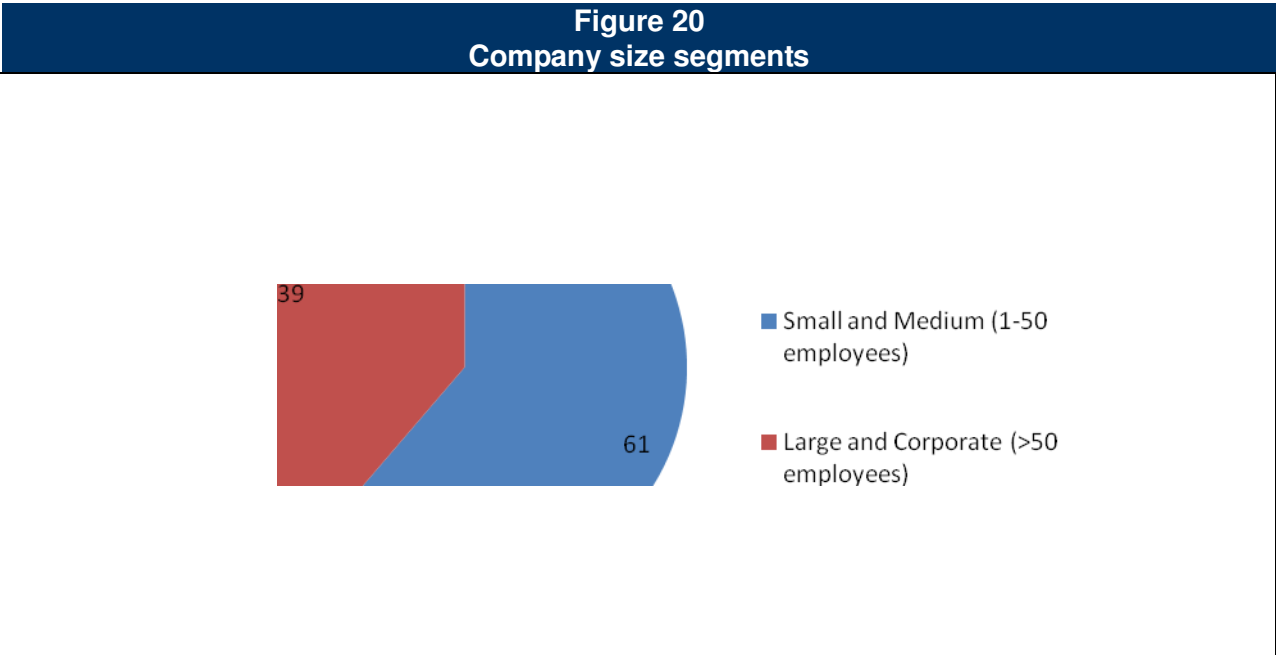
**Figure 19**  
**Total SA employees**



Source: BMI-T, 2009

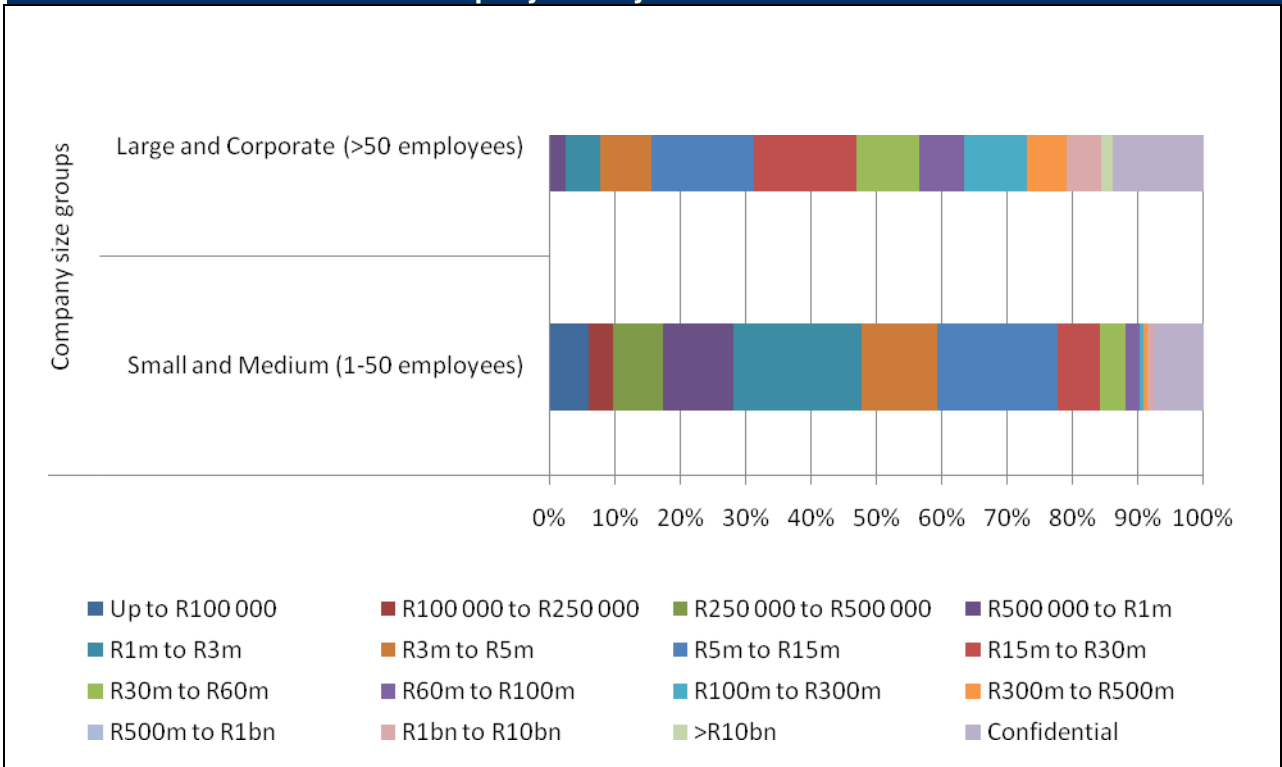
Seventy percent (70%) of respondents have between 1 and 100 employees.

The SA employees are grouped together for segmentation purposes as per the figure below.



Source: BMI-T, 2009

**Figure 21**  
Company size by annual turnover

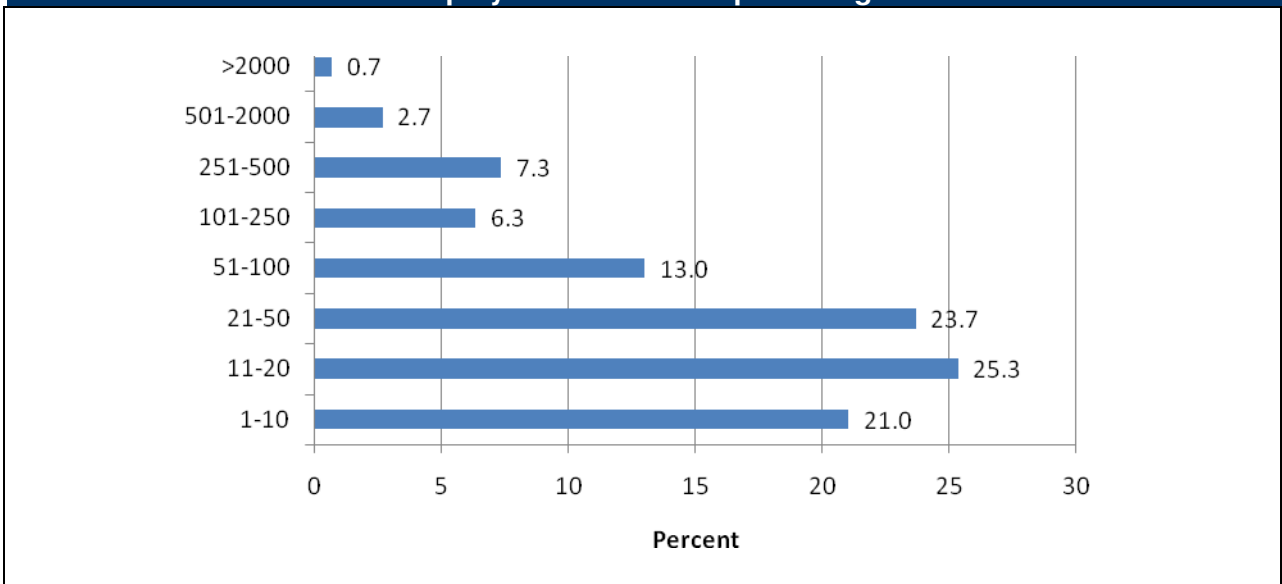


Source: BMI-T, 2009

The annual turnover breakdown shows larger companies by employee number generally have larger annual turnovers, as is to be expected.

The number of employees in Mpumalanga is shown below.

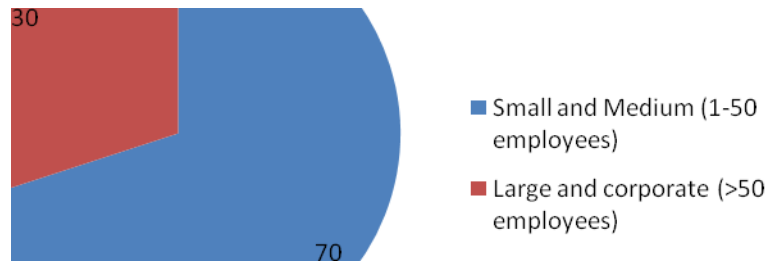
**Figure 22**  
Employee brackets in Mpumalanga



Source: BMI-T, 2009

Almost half the respondents have up to 50 employees.

**Figure 23**  
**Employees in Mpumalanga grouped**

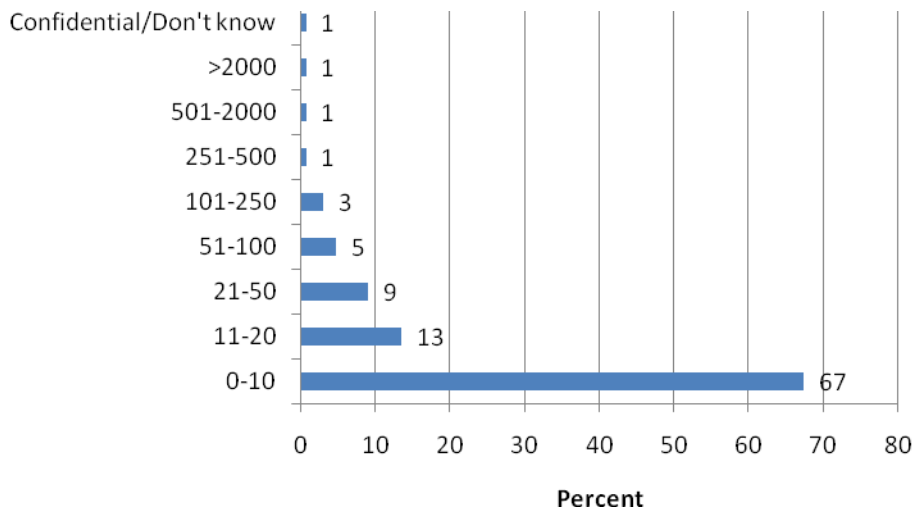


Source: BMI-T, 2009

The Mpumalanga employees have a higher percentage in the small and medium category than the SA employee numbers.

The number of knowledge workers in the whole company is shown below.

**Figure 24**  
**Number of knowledge workers in the whole company**

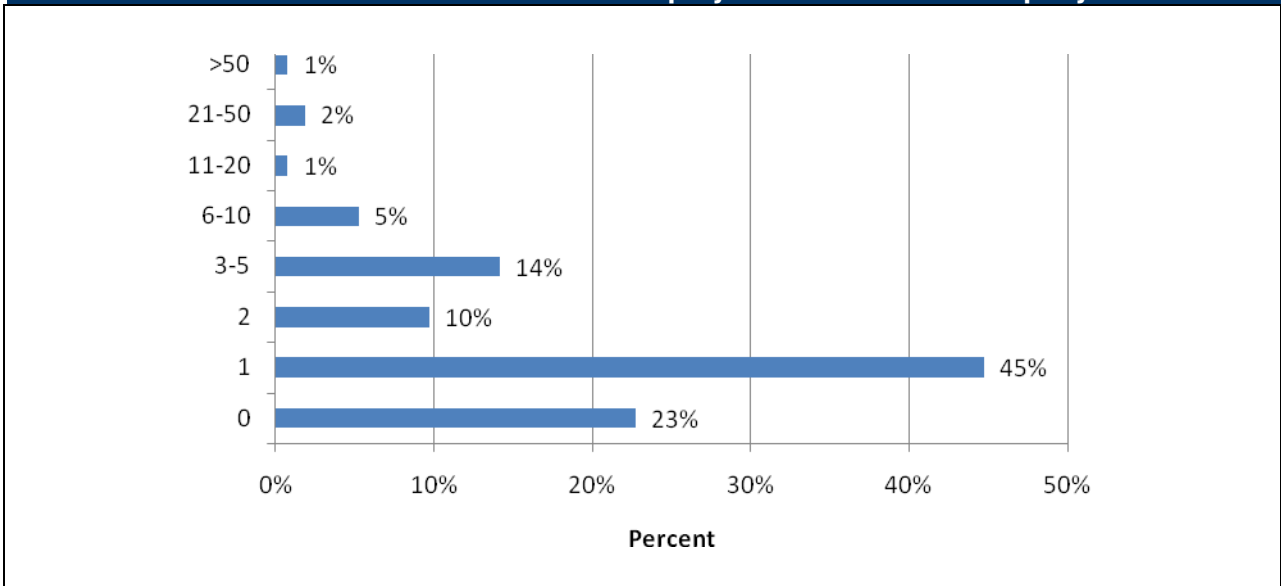


Source: BMI-T, 2009

Two thirds of respondents have between zero and ten knowledge workers, only a few respondents (12%) have more than 50 knowledge workers.

The number of IT and/or Telecoms employees in the whole company shows almost half only have one such person at the company.

**Figure 25**  
**Number of IT and/or Telecoms employees in the whole company**



Source: BMI-T, 2009

### Segmentations

The tables below show segmentations of the number of employees by district, industry sector and company size.

The mean refers to the arithmetic average (i.e. the mean is the sum of the observations divided by the number of observations), the median is the number below 50% of the respondents are situated, the 25th percentile is the number below which 25% of respondents are situated and the 75th percentile is the number below which 75% of the respondents answers are. Valid N refers to the total number of valid responses.

**Table 8**  
**Total SA employees segmented**

		Mean	Median	Percentile 25	Percentile 75	Valid N
District Municipality	Ehlanzeni	1 219	25	11	100	132
	Gert Sibande	471	28	14	58	76
	Nkangala	660	30	14	300	71
Industry sectors collapsed	Primary and secondary industries	684	50	25	250	85
	Financial and business services	333	23	13	105	66
	Retail, wholesale and other services	1 277	19	10	53	128
Company size groups	Small and Medium (1-50 employees)	19	15	9	26	182
	Large and Corporate (>50 employees)	2 475	300	95	1 400	97

Source: BMI-T, 2009

The table shows the average number of employees in Ehlanzeni, in retail and wholesale trade and in large companies is much higher than the other categories.

<b>Table 9 Mpumalanga employees segmented</b>						
		<b>Mean</b>	<b>Median</b>	<b>Percentile 25</b>	<b>Percentile 75</b>	<b>Valid N</b>
District Municipality	Ehlanzeni	69	21	10	60	146
	Gert Sibande	112	27	13	53	79
	Nkangala	532	30	12	100	75
Industry sectors collapsed	Primary and secondary industries	528	46	22	200	89
	Financial and business services	64	20	12	60	68
	Retail, wholesale and other services	52	18	10	42	143
Company size groups	Small and Medium (1-50 employees)	19	15	9	26	184
	Large and Corporate (>50 employees)	482	86	52	300	115

Source: BMI-T, 2009

For Mpumalanga employees the situation is different except for large companies. Ehlanzeni has the lowest average employees, which indicates that more companies surveyed there are branch offices of national companies. The primary and secondary industries also have a much higher mean showing that those industries employ more people in Mpumalanga itself.

<b>Table 10 Knowledge workers in the whole company segmented</b>						
		<b>Mean</b>	<b>Median</b>	<b>Percentile 25</b>	<b>Percentile 75</b>	<b>Valid N</b>
District Municipality	Ehlanzeni	234	6	3	13	144
	Gert Sibande	12	5	3	11	79
	Nkangala	90	7	3	30	75
Industry sectors collapsed	Primary and secondary industries	76	7	3	26	89
	Financial and business services	39	8	4	18	68
	Retail, wholesale and other services	227	5	2	10	141
Company size groups	Small and Medium (1-50 employees)	6	4	2	7	182
	Large and Corporate (>50 employees)	351	18	7	55	115

Source: BMI-T, 2009

The mean for knowledge workers is much higher for Ehlanzeni situated respondents, although it must be kept in mind there are more companies in Ehlanzeni that have offices in other provinces. The same is true for the higher mean in the retail and wholesale trade sector.

**Table 11**  
**Number of IT and/or Telecoms employees in the whole company segmented**

		Mean	Median	Percentile 25	Percentile 75	Valid N
District Municipality	Ehlanzeni	3	1	0	1	126
	Gert Sibande	6	2	1	5	72
	Nkangala	1	1	1	2	70
Industry sectors collapsed	Primary and secondary industries	4	1	1	2	83
	Financial and business services	3	1	1	2	63
	Retail, wholesale and other services	3	1	1	2	122
Company size groups	Small and Medium (1-50 employees)	2	1	0	2	169
	Large and Corporate (>50 employees)	5	1	1	3	98

Source: BMI-T, 2009

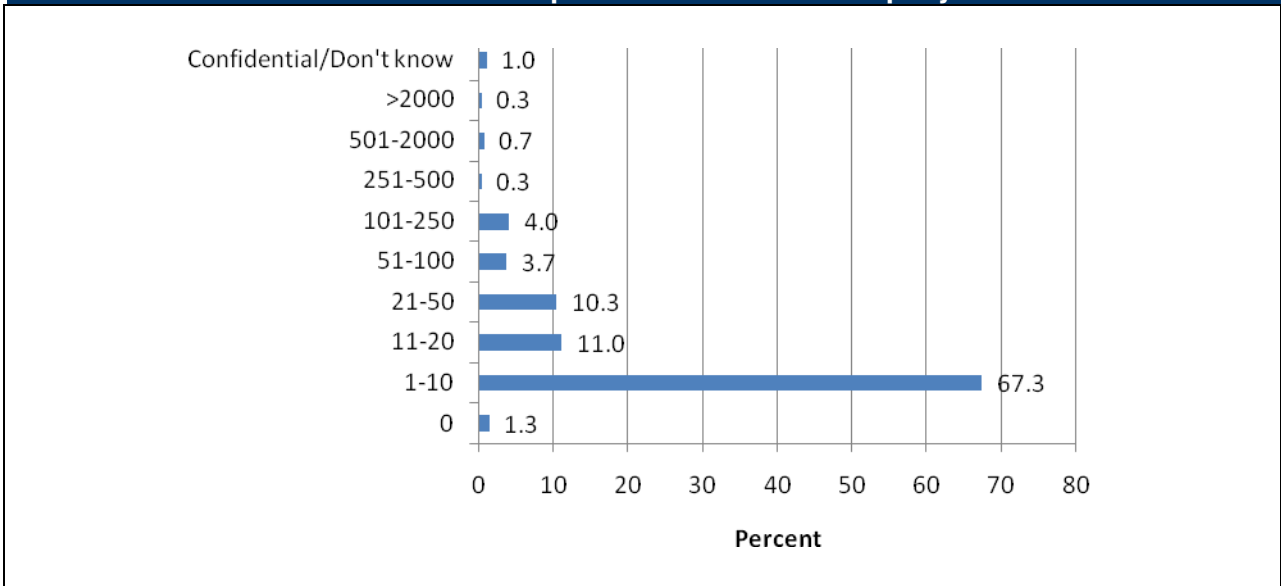
Gert Sibande district has a higher mean than the other two districts as do the primary and secondary industries. The median however will not there is not much difference on the lower end of scale.

### ***Number of computers (PCs and laptops/notebooks)***

Respondents were asked to indicate the number of computers (desktop PCs and laptops) they have at their organisation.



**Figure 26**  
**Number of computers in the whole company**



Source: BMI-T, 2009

More than two thirds of the respondents have between one and ten computers at their company.

### *Segmentations*

The tables below show segmentations of the number of PCs/laptops by district, company size and industry sector. The mean for Ehlanzeni district is much higher than the other two districts, but from the median and 25th and 75th percentiles one can see that the lower end amounts are similar to the other districts, thus the higher end numbers are much higher and the larger number of respondents for Ehlanzeni.

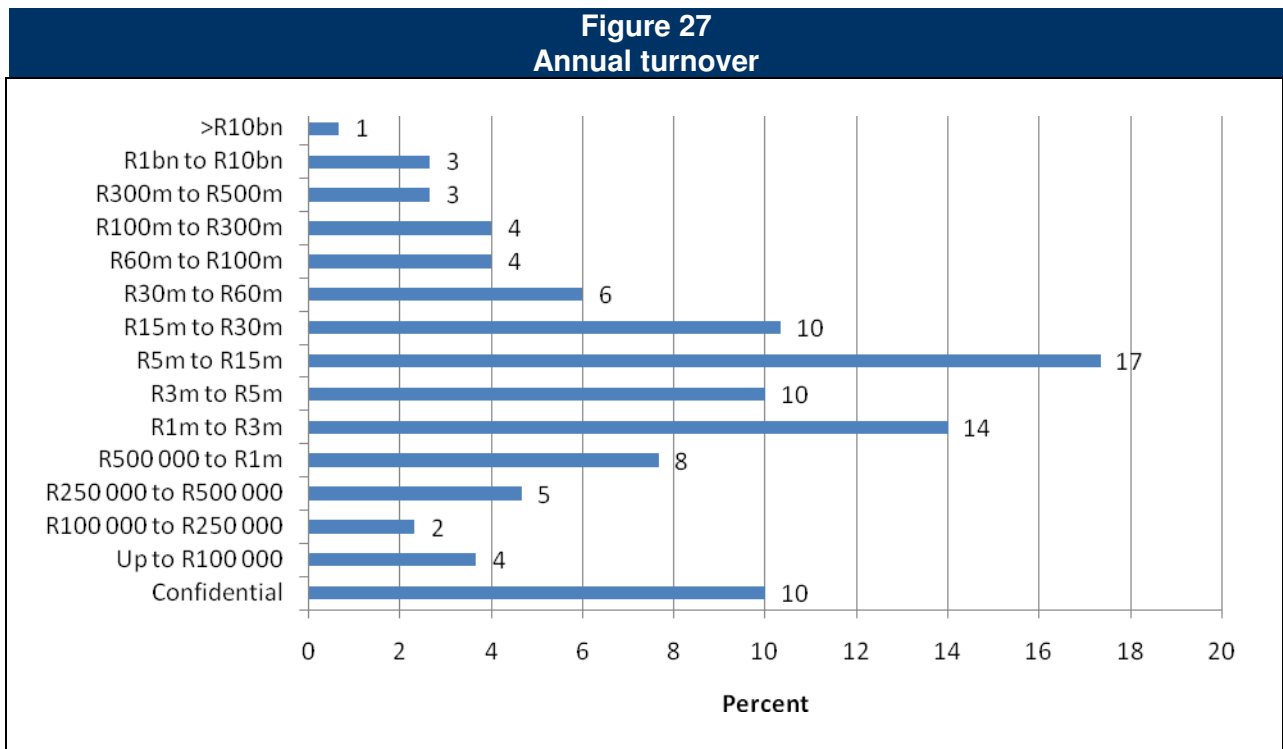
The retail and wholesale trade sectors have the highest mean; due to the fact that there are more respondents in that sector and there are companies in that sector that have offices in other provinces. The mean of the large and corporate companies is much higher than for the small and medium respondents.

Table 12 Number of computers segmented						
		Mean	Median	Percentile 25	Percentile 75	Valid N
District Municipality	Ehlanzeni	237	6	3	12	143
	Gert Sibande	11	5	2	10	79
	Nkangala	38	7	3	26	75
Industry sectors collapsed	Primary and secondary industries	36	7	3	29	89
	Financial and business services	39	8	4	19	68
	Retail, wholesale and other services	227	5	2	10	140
Company size groups	Small and Medium (1-50 employees)	6	4	2	7	181
	Large and Corporate (>50 employees)	318	15	7	50	115

Source: BMI-T, 2009

### Annual turnover

Respondents were asked to indicate their total annual turnover for the last financial year.

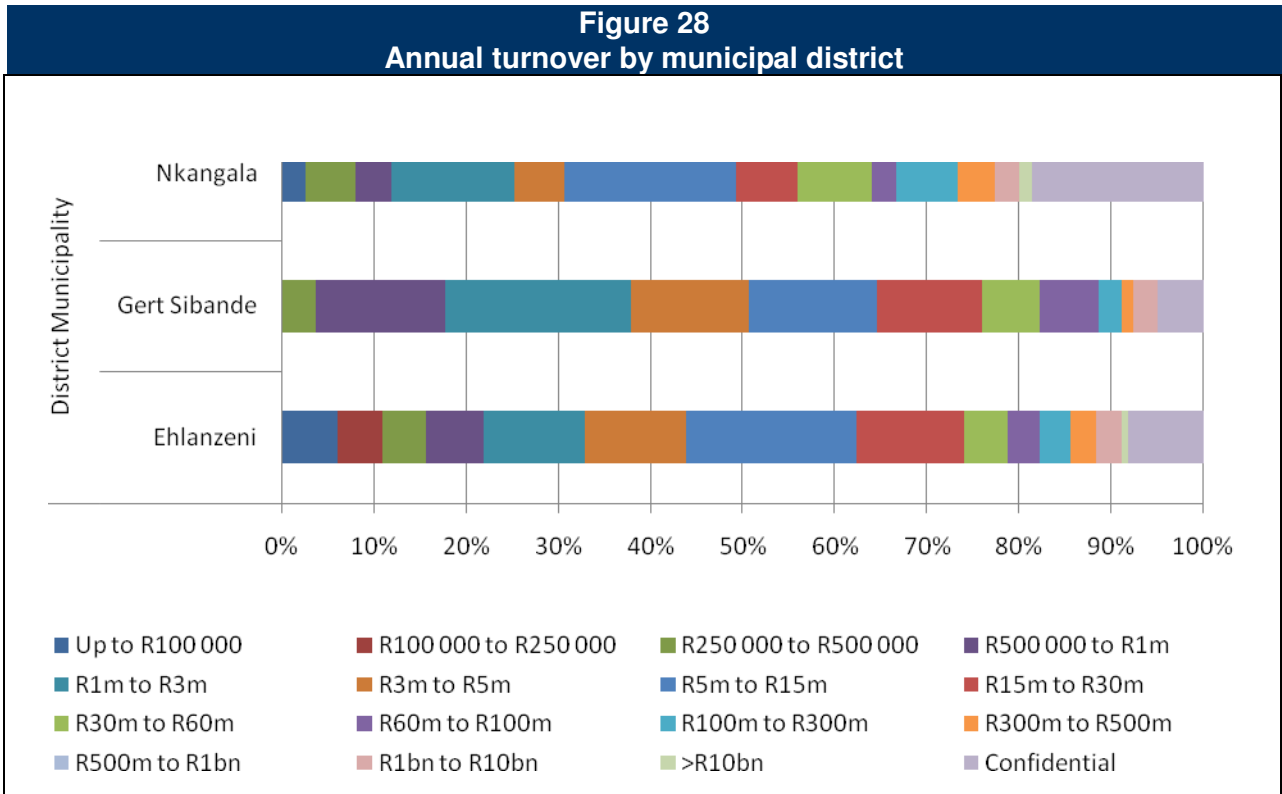


Source: BMI-T, 2009

The majority of businesses surveyed have between R1 million and R30 million annual turnover. Four percent of the businesses have R1 billion or more annual turnover and 19% of businesses that have under R1 million annual turnover.

### Segmentations

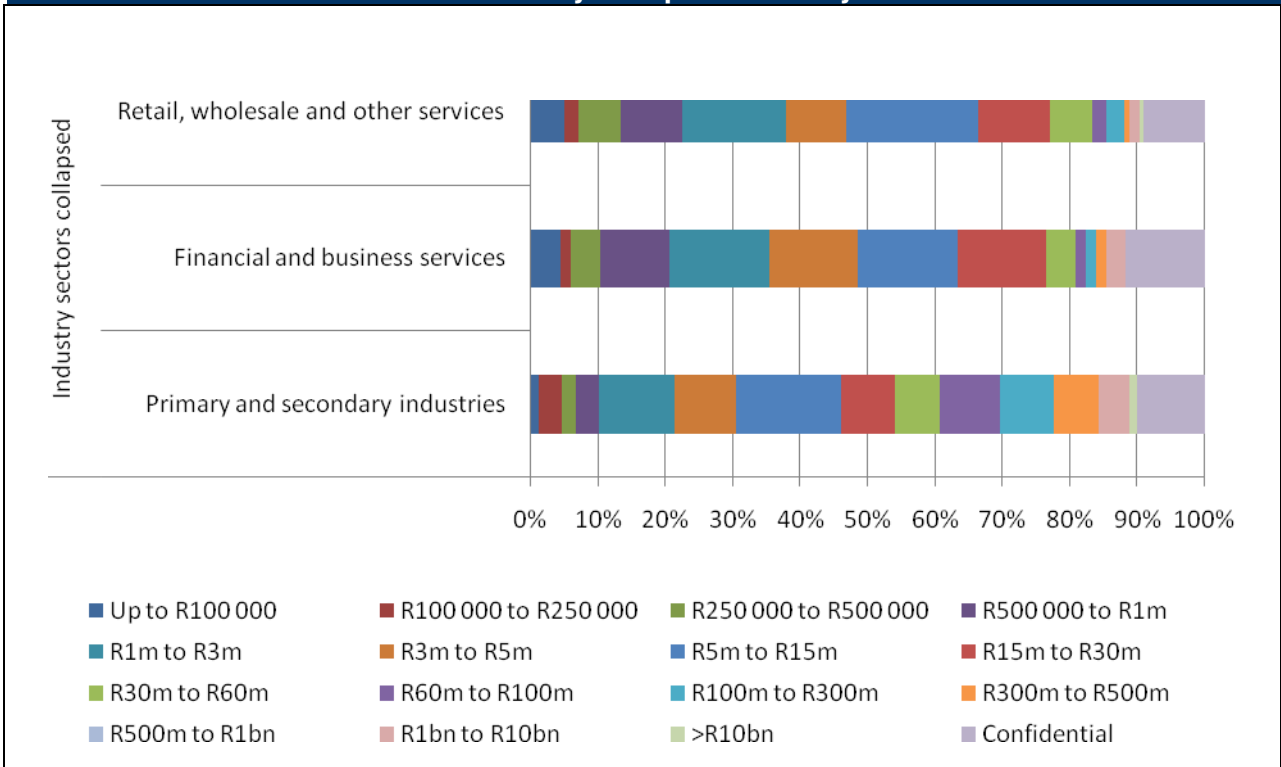
The figures below show segmentations of annual turnover by district, industry sector and company size.



Source: BMI-T, 2009

The figure shows that turnover is quite spread out between all three districts.

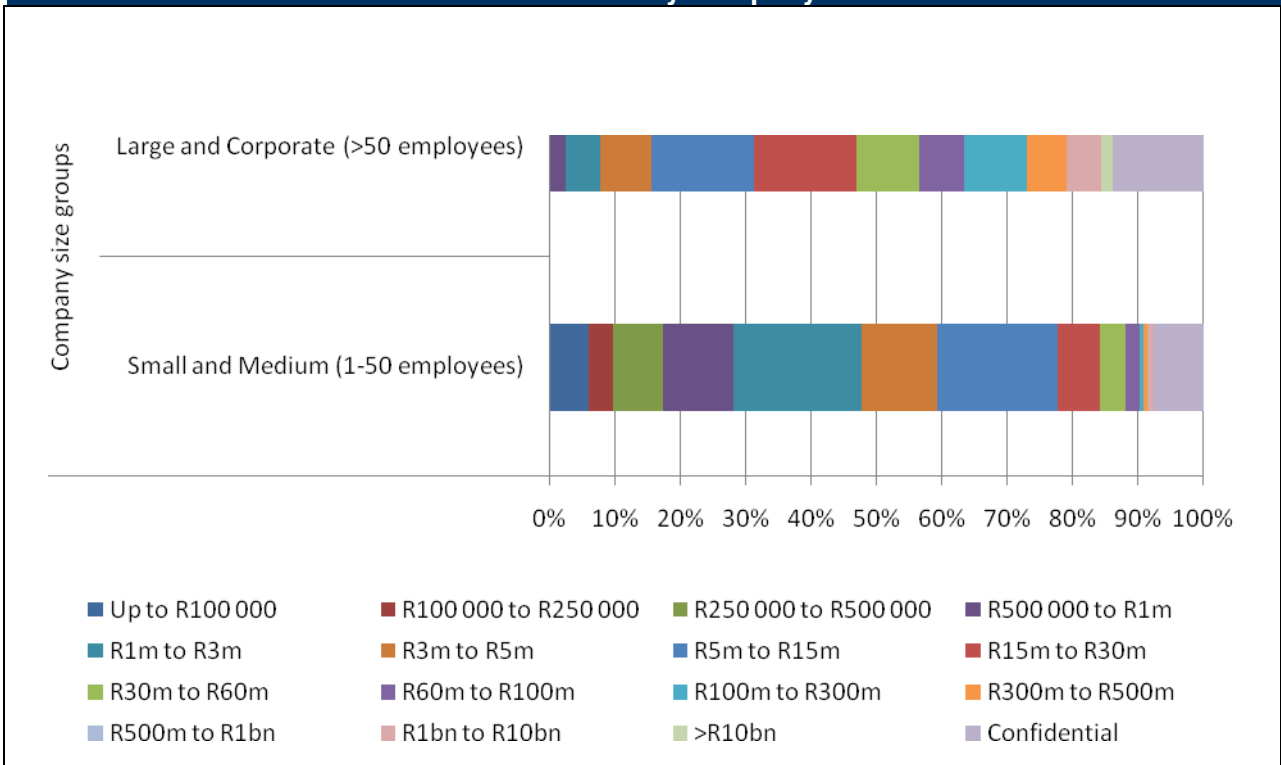
**Figure 29**  
Annual turnover by collapsed industry sectors



Source: BMI-T, 2009

Turnover is higher for primary and secondary industries.

**Figure 30**  
Annual Turnover by company size



Source: BMI-T, 2009

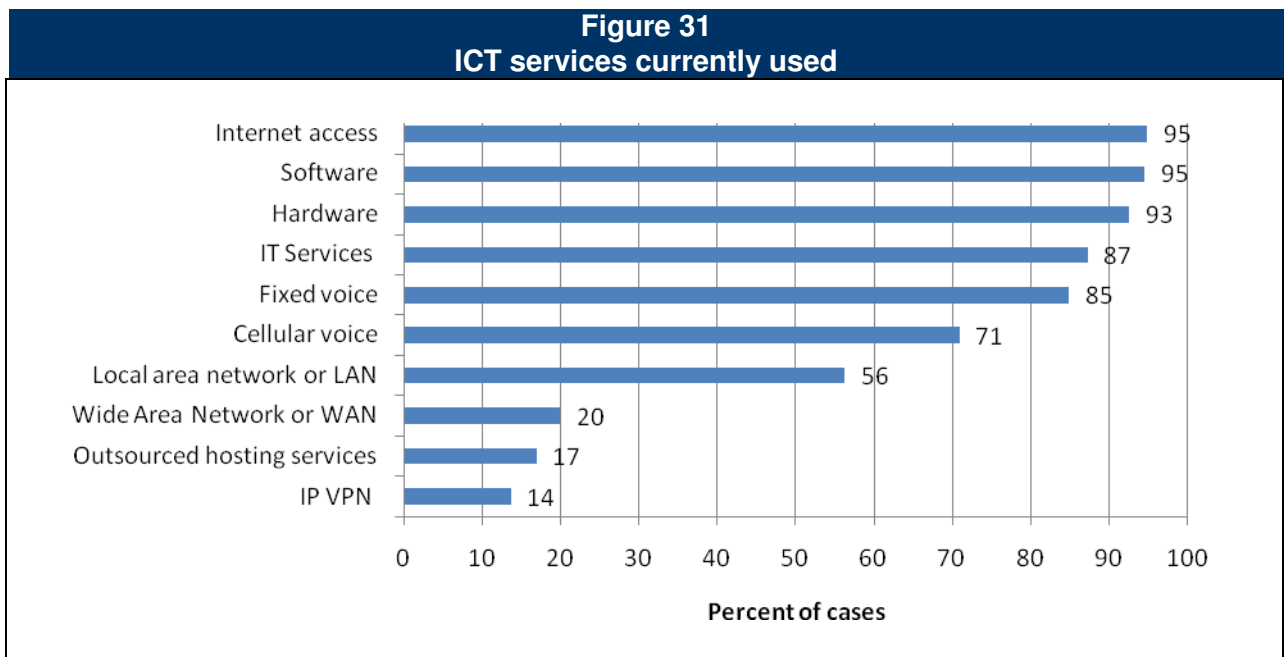
As is to be expected the large and corporate companies have higher turnovers.

## ICT Access and Usage

This section covers the IT and Telecoms services that the respondents have access to and use and also their perception of the performance/service levels of the suppliers of those services.

### ICT services used

Respondents were asked which IT and Telecoms services their company currently uses.

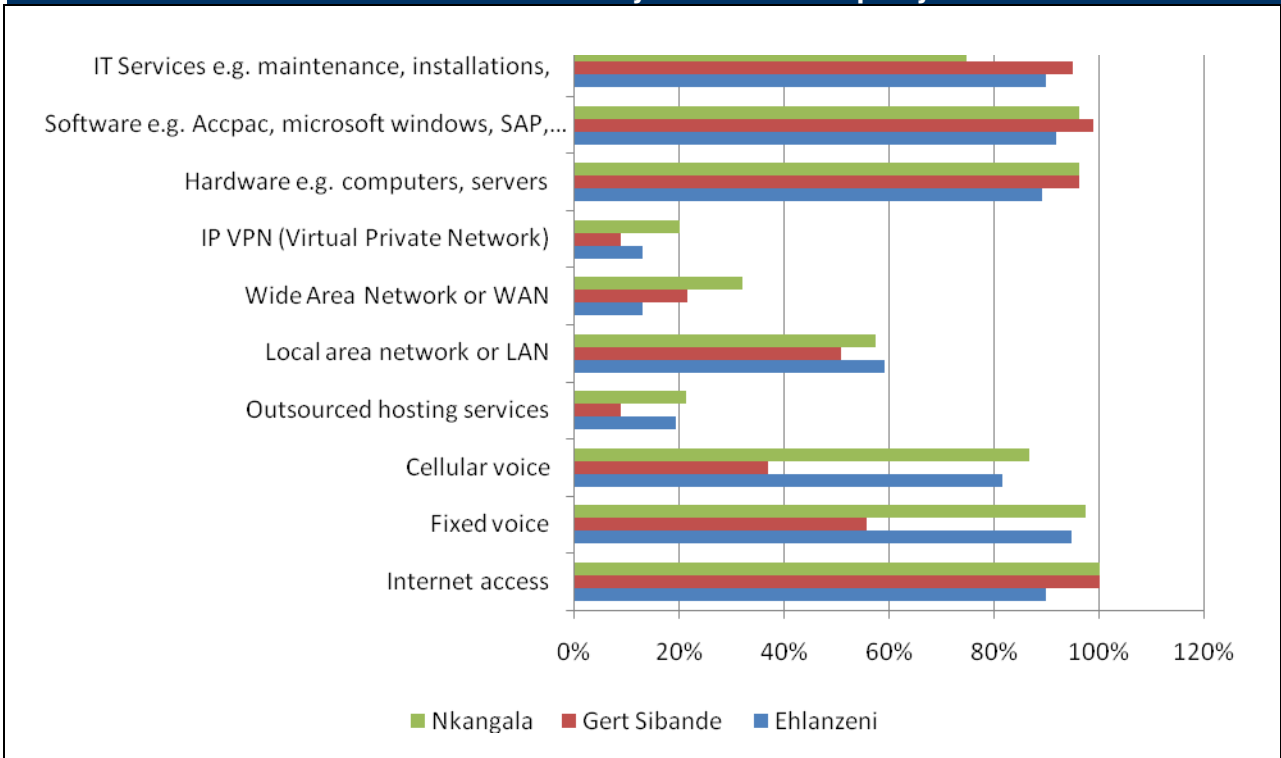


Source: BMI-T, 2009

The figure shows 95% of respondents have internet access and software. The last three ICT services with 20% and less respondents indicates that there is not a high level of sophistication in terms of ICT services used by the majority of respondents and that the majority of respondents have basic ICT services only, with just over half having a local area network.

Segmentations of the IT and Telecoms services used are shown in the figures below.

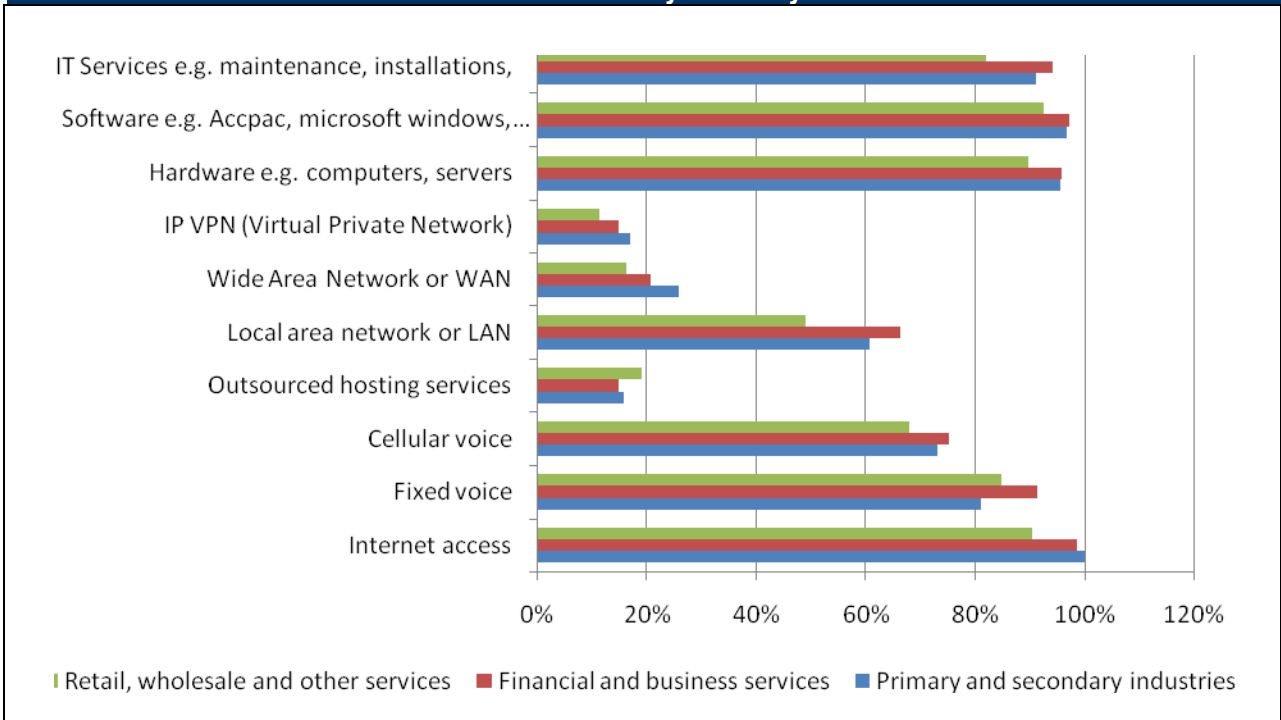
**Figure 32**  
ICT services used by district municipality



Source: BMI-T, 2009

The major differences are in cellular and fixed line voice services between the districts, with Gert Sibande having much lower levels of usage of voice services.

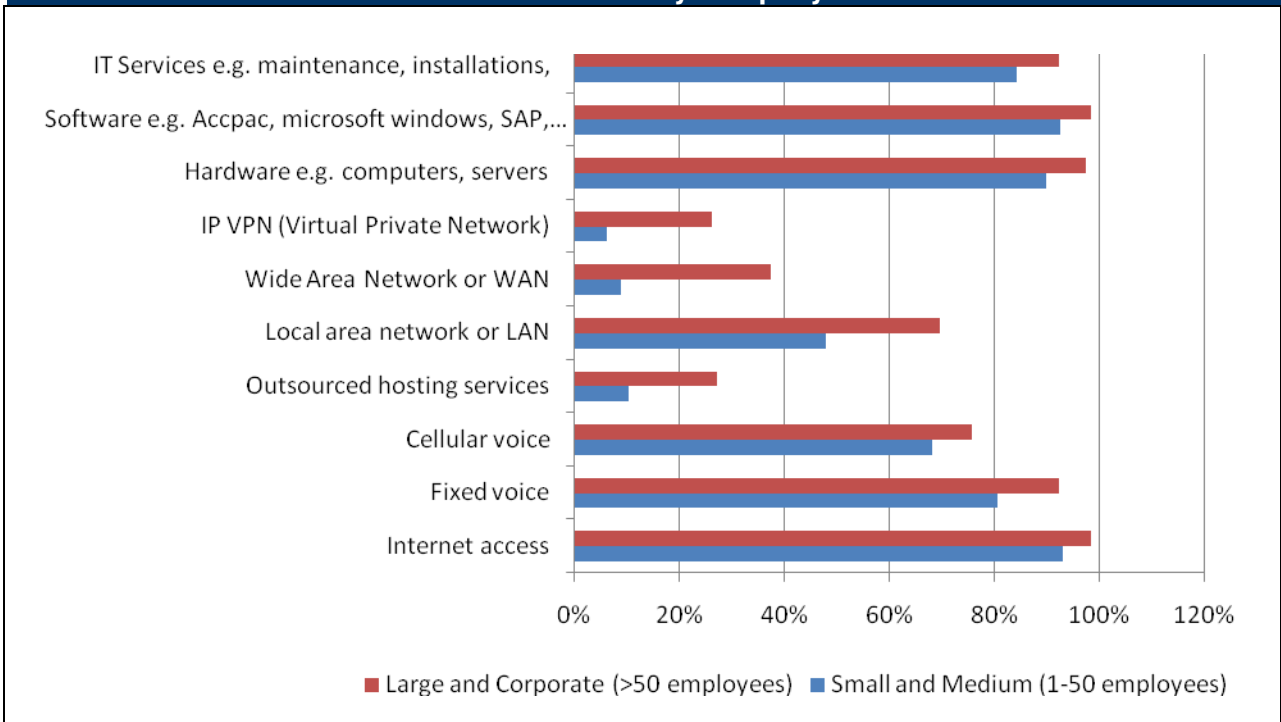
**Figure 33**  
ICT services used by industry sector



Source: BMI-T, 2009

The industry sectors don't show major differences in usage.

**Figure 34**  
**ICT services used by company size**



Source: BMI-T, 2009

The larger companies have higher levels of usage for all ICT services, especially the more sophisticated ones such as WANs, LANs, IP VPNs and outsourced hosting services.

For the ICT services used by the respondents, they were asked who their suppliers were and also to rate their suppliers in terms of overall service and performance, from zero to five, as follows:

Table 13 Supplier rating scale					
Don't know	Very Poor	Poor	Average	Good	Excellent
0	1	2	3	4	5

Source: BMI-T, 2009

The most common primary suppliers in order of most to least for internet access are: Telkom, MWEB, Vodacom, @lantic and Internet Solutions.

The most common primary suppliers in order of most to least for fixed voice are: Telkom (80%), Protel, Siemens, Rystar, IS, NEC, Maxtel.

The most common primary suppliers in order of most to least for cellular voice are: Vodacom (39%), MTN (9%), and Nashua Mobile (8%).

The most common primary suppliers in order of most to least for outsourced hosting services are: Hux, Vodacom and various other suppliers.

The most common primary suppliers in order of most to least for LAN are: Telkom (8%), Hux, Compulink, GijimaAST.

The most common primary suppliers in order of most to least for WAN are: Telkom and Internet Solutions.

The most common primary suppliers in order of most to least for IP VPN are: Telkom, Internet Solutions, MWEB

The most common primary suppliers in order of most to least for hardware are: HP, EBM, Samsung, LG, Dell

The most common primary suppliers in order of most to least for software are: Microsoft, Pastel, Compulink, EBM

The most common primary suppliers in order of most to least for internet access are: EBM, Compulink, Hux, PS Rekenaars

The supplier names provided indicated a general low level of understanding of the term primary supplier as a number of respondents said services were supplied in-house or from suppliers who do not provide the service asked about.

### ***ICT services supplier ratings***

The mean of the rating for the primary suppliers of the listed ICT services are shown in the table below.

<b>Table 14 Primary supplier rating for ICT services</b>		
	<b>Mean</b>	<b>Number of responses</b>
IP VPN	4.17	36
Outsourced hosting services	3.98	44
Wide Area Network or WAN	4.00	53
Local area network or LAN	4.17	144
Cellular voice	4.14	202
Fixed voice	3.29	251
IT Services	4.28	239
Hardware	4.19	260
Software	4.32	268
Internet access	3.93	281

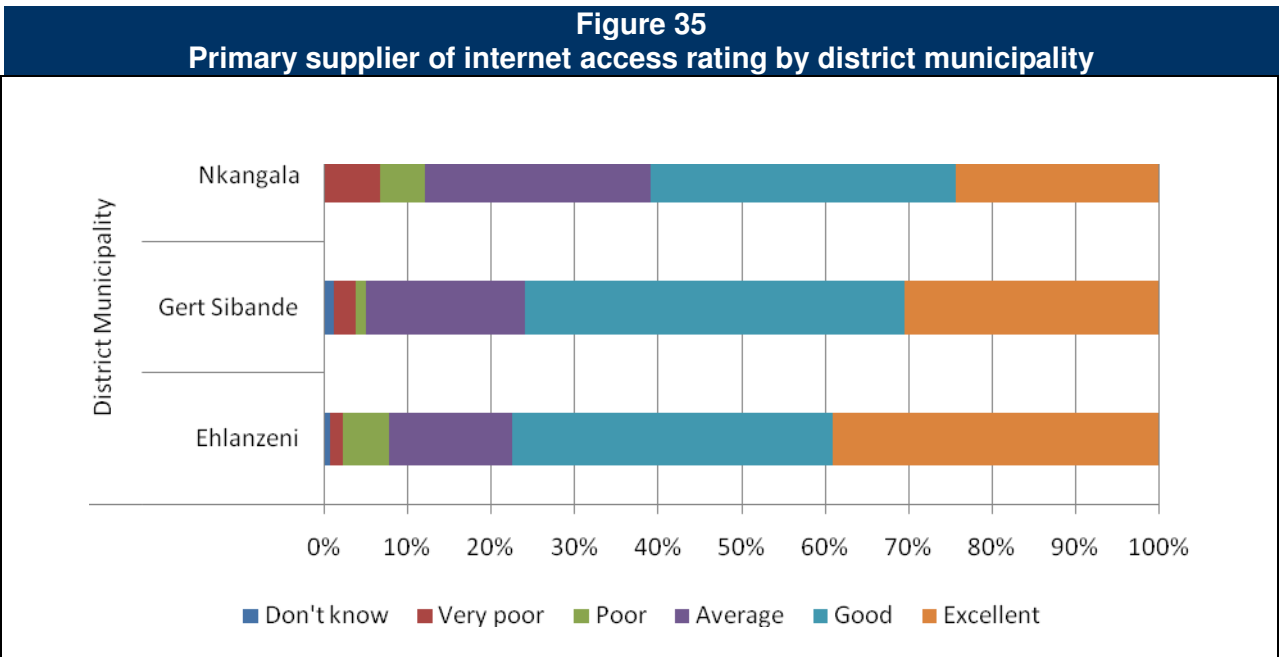
Source: BMI-T, 2009

The highest average rating is for software and then IT services suppliers, the lowest average rating is for fixed voice, for which 80% of the respondents' primary supplier is Telkom.

The main reasons given for low ratings received are infrastructure problems and slow repair times and poor service by ICT service providers.

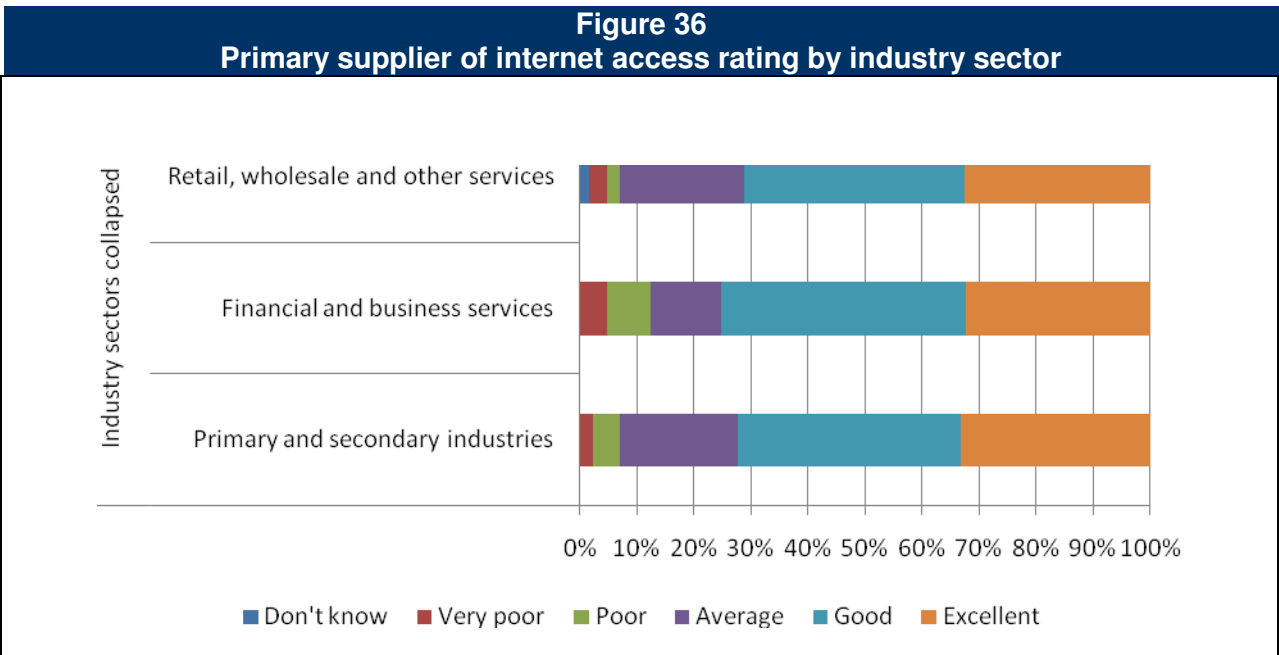


Internet access supplier rating segmentations



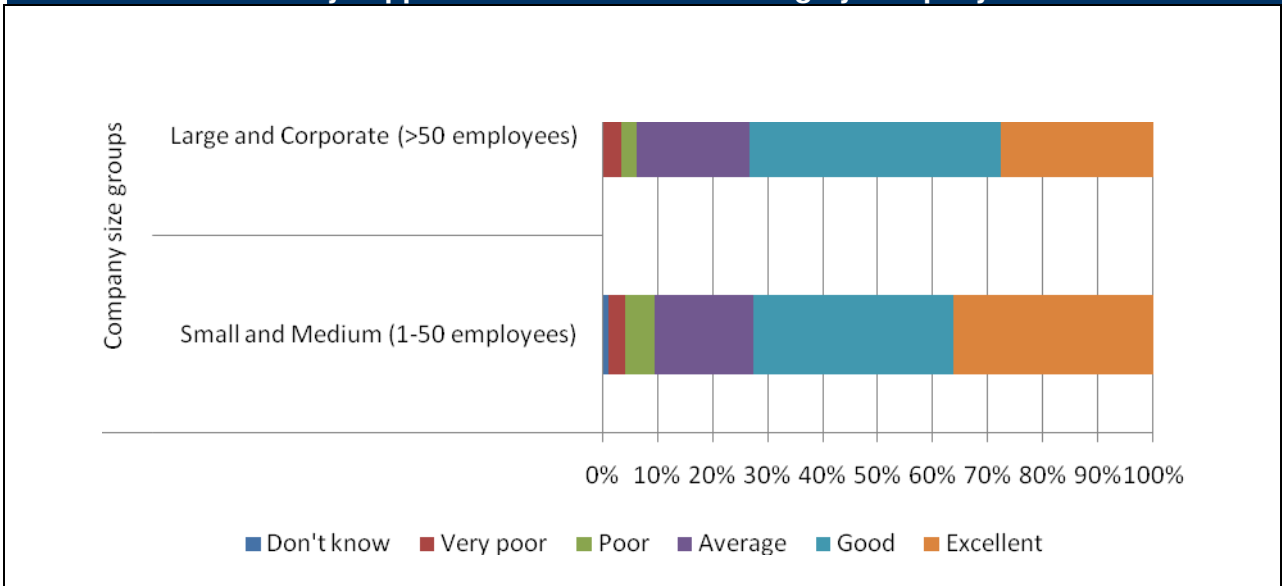
Source: BMI-T, 2009

The district with the lowest ratings is Nkangala.



Source: BMI-T, 2009

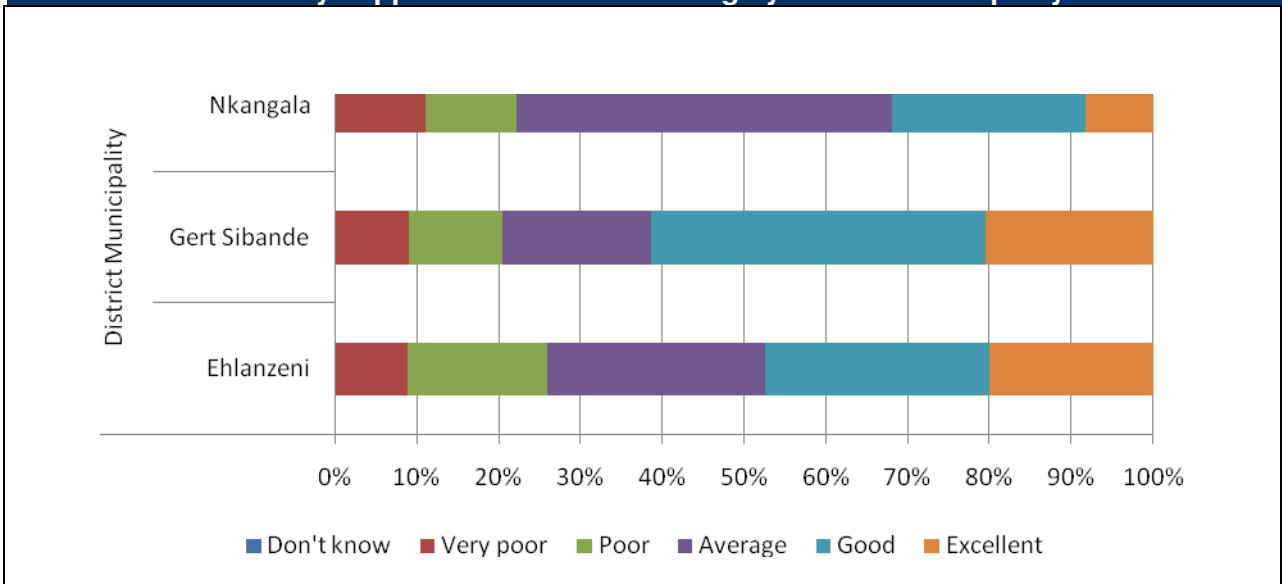
**Figure 37**  
**Primary supplier of internet access rating by company size**



Source: BMI-T, 2009

*Fixed voice supplier rating segmentations*

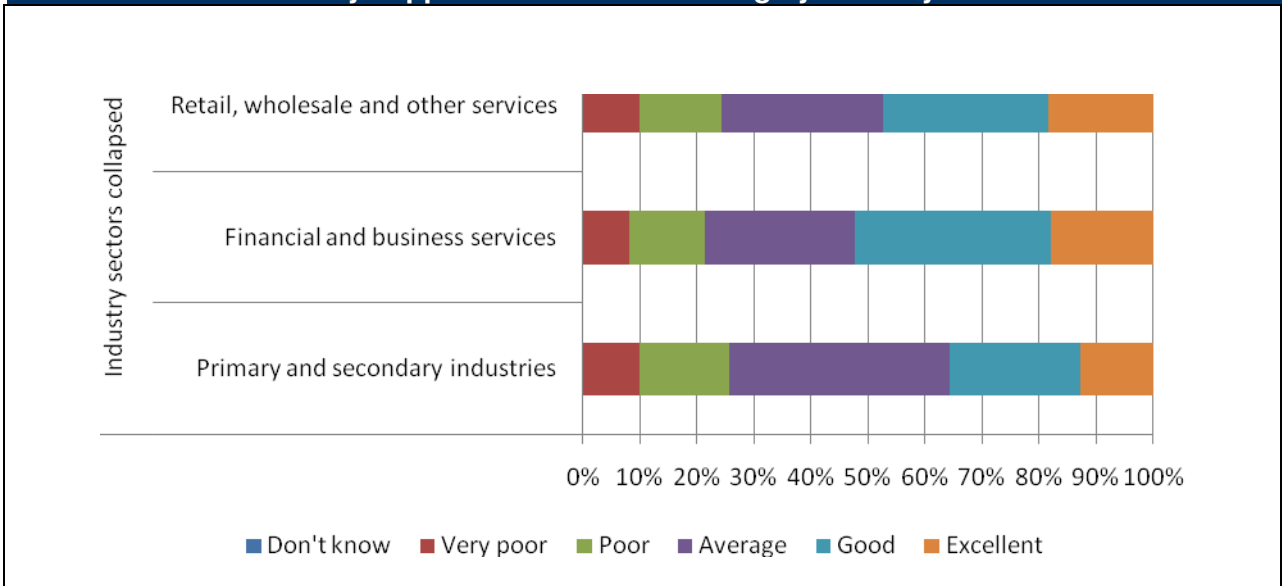
**Figure 38**  
**Primary supplier of fixed voice rating by district municipality**



Source: BMI-T, 2009

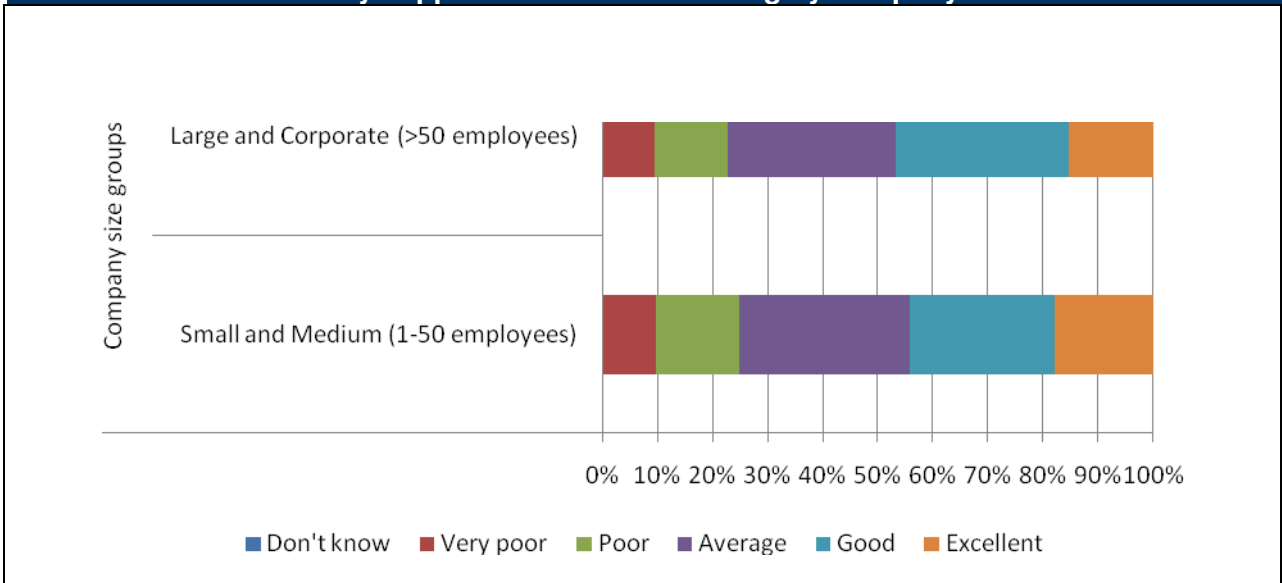
Ehlanzeni gave the lowest ratings.

**Figure 39**  
**Primary supplier of fixed voice rating by industry sector**



Source: BMI-T, 2009

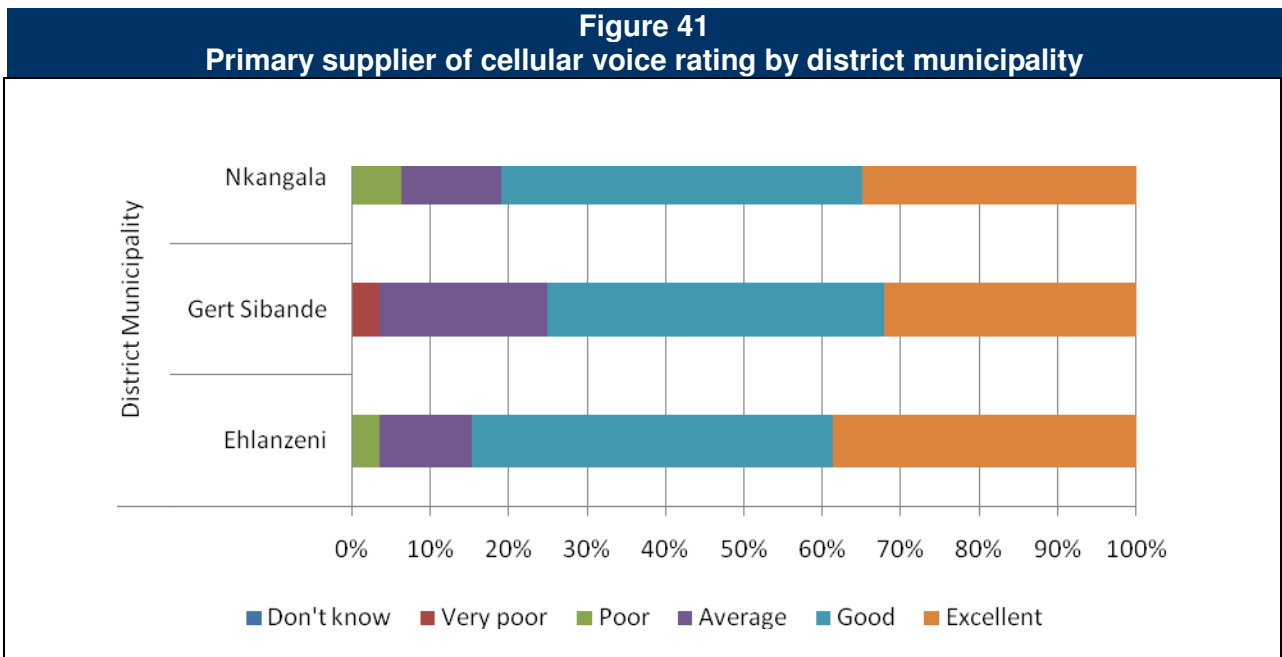
**Figure 40**  
**Primary supplier of fixed voice rating by company size**



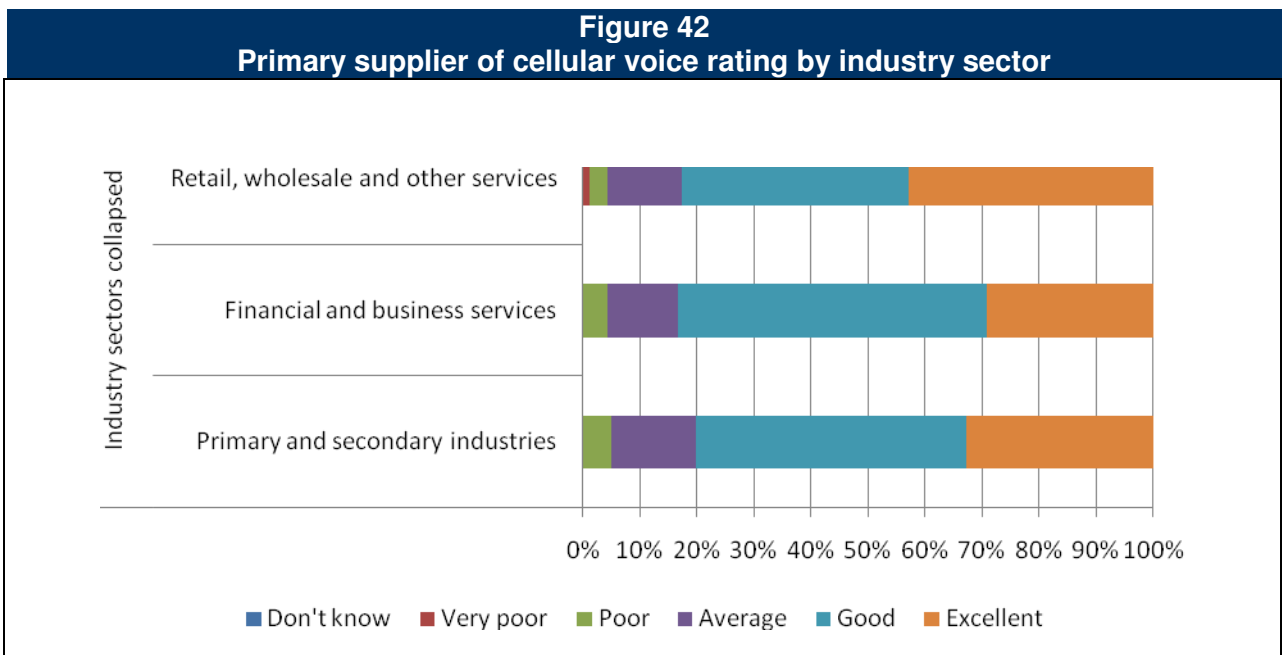
Source: BMI-T, 2009

The ratings for company size are almost identical.

Cellular voice supplier rating segmentations

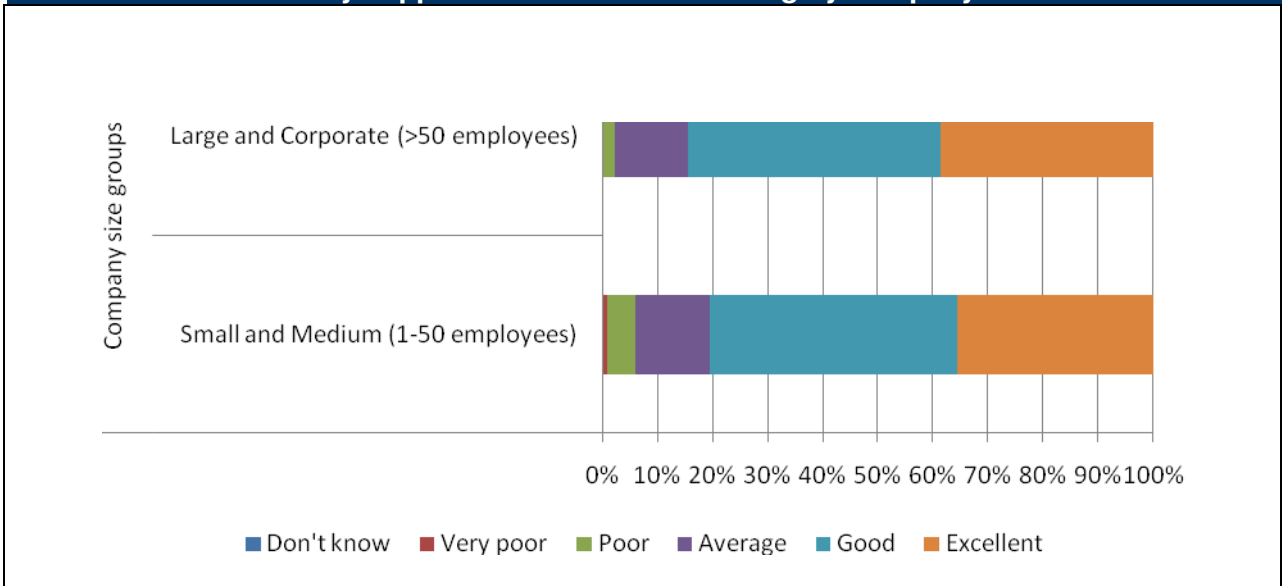


Source: BMI-T, 2009



Source: BMI-T, 2009

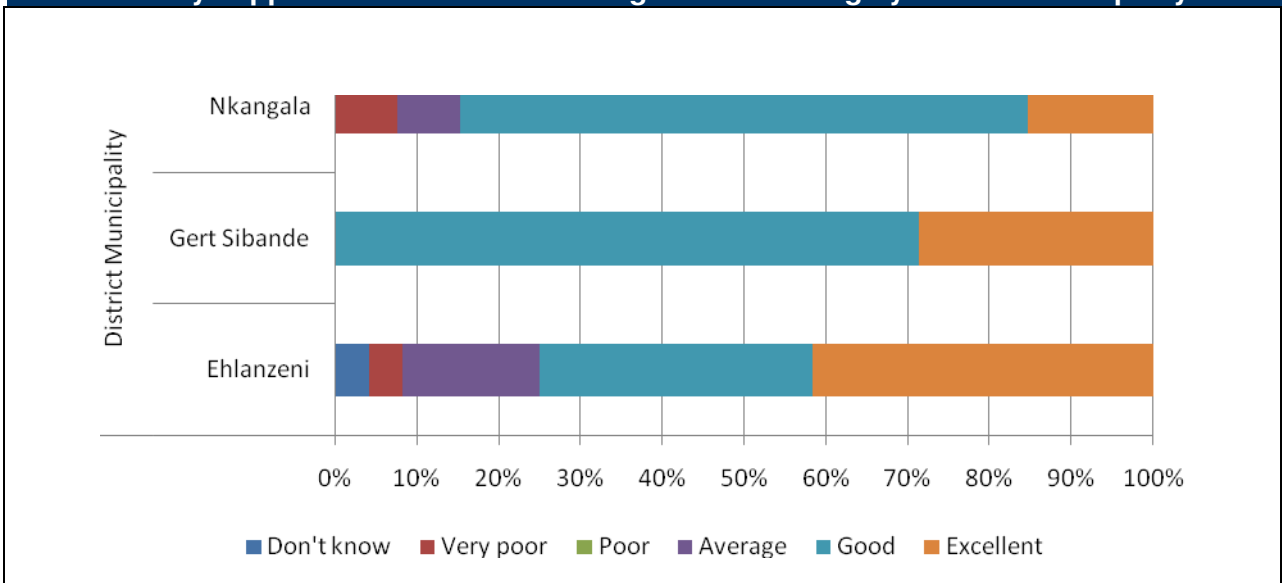
**Figure 43**  
**Primary supplier of cellular voice rating by company size**



Source: BMI-T, 2009

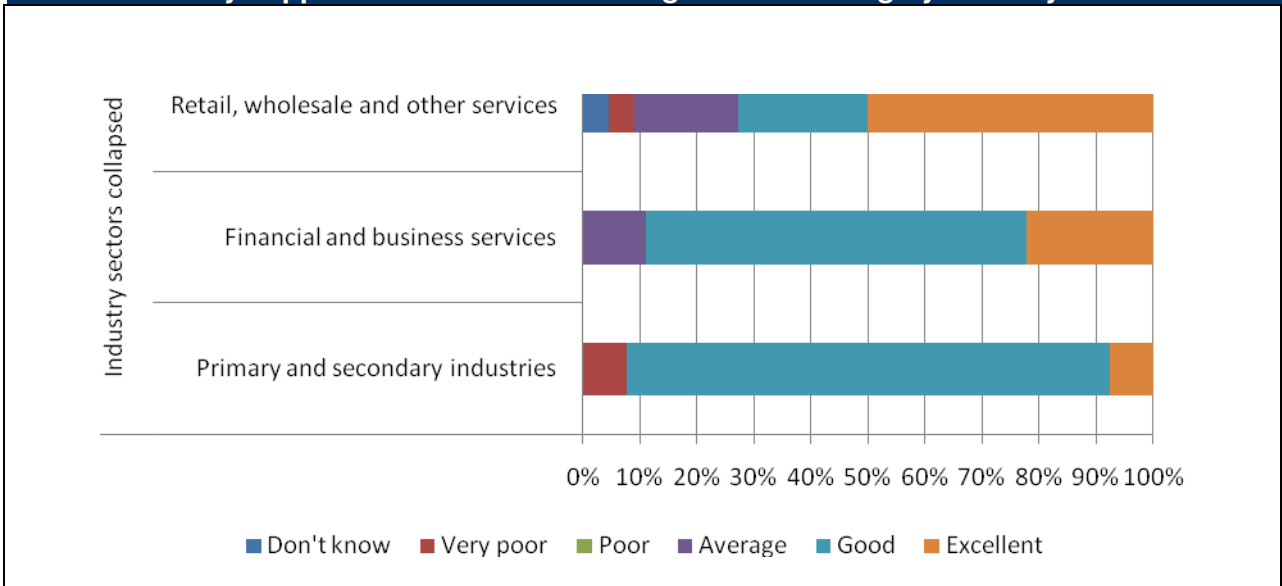
*Outsourced hosting services supplier rating segmentations*

**Figure 44**  
**Primary supplier of outsourced hosting services rating by district municipality**



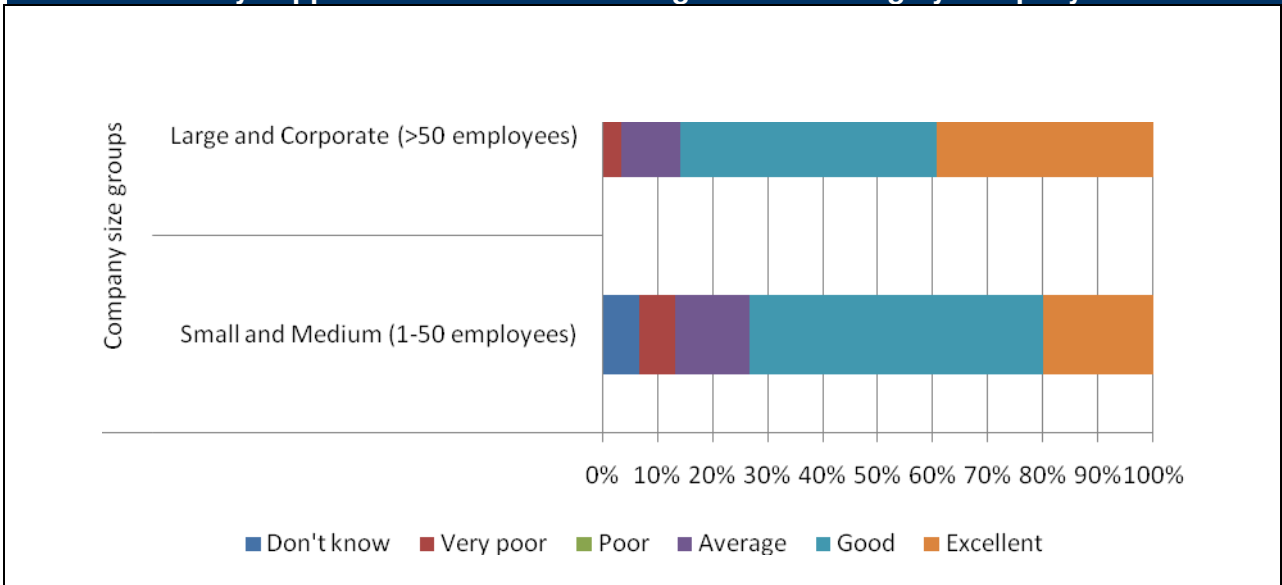
Source: BMI-T, 2009

**Figure 45**  
**Primary supplier of outsourced hosting services rating by industry sector**



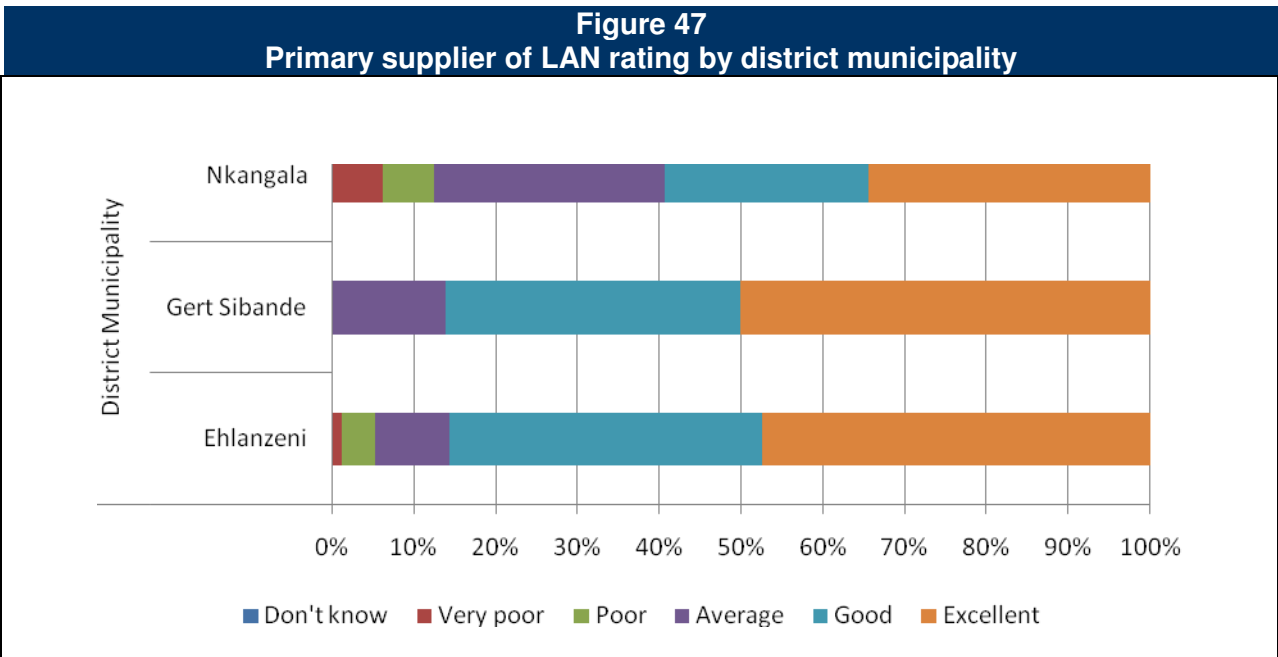
Source: BMI-T, 2009

**Figure 46**  
**Primary supplier of outsourced hosting services rating by company size**



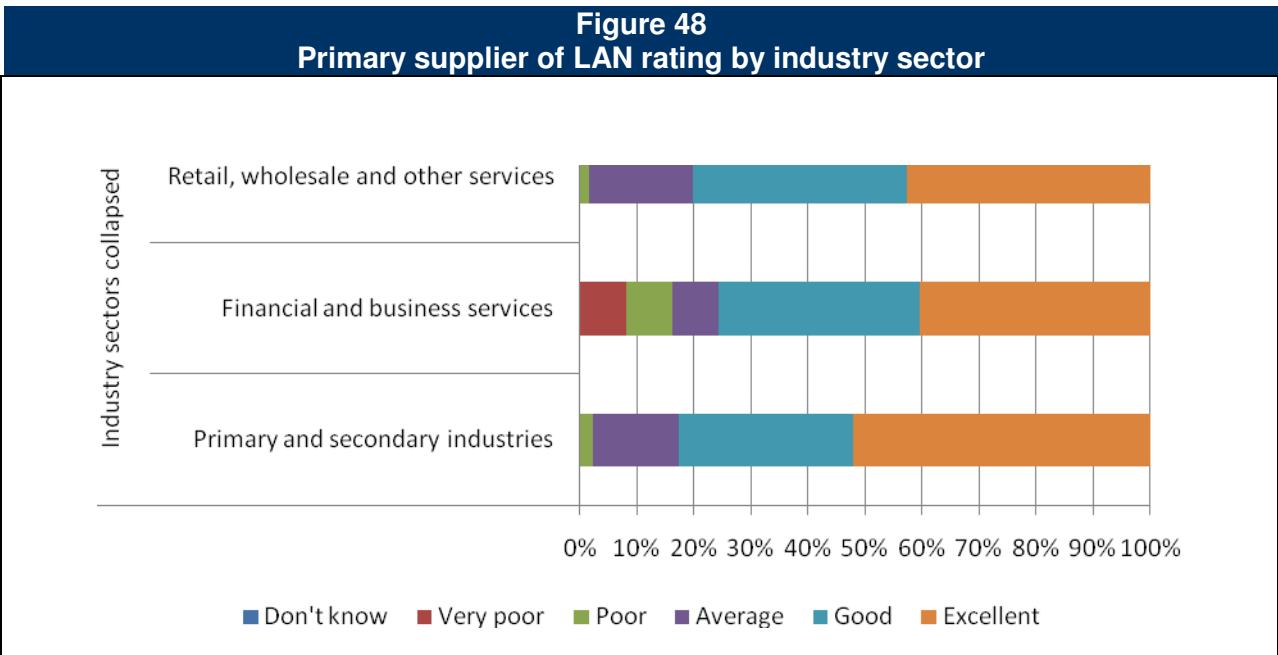
Source: BMI-T, 2009

LAN supplier rating segmentations



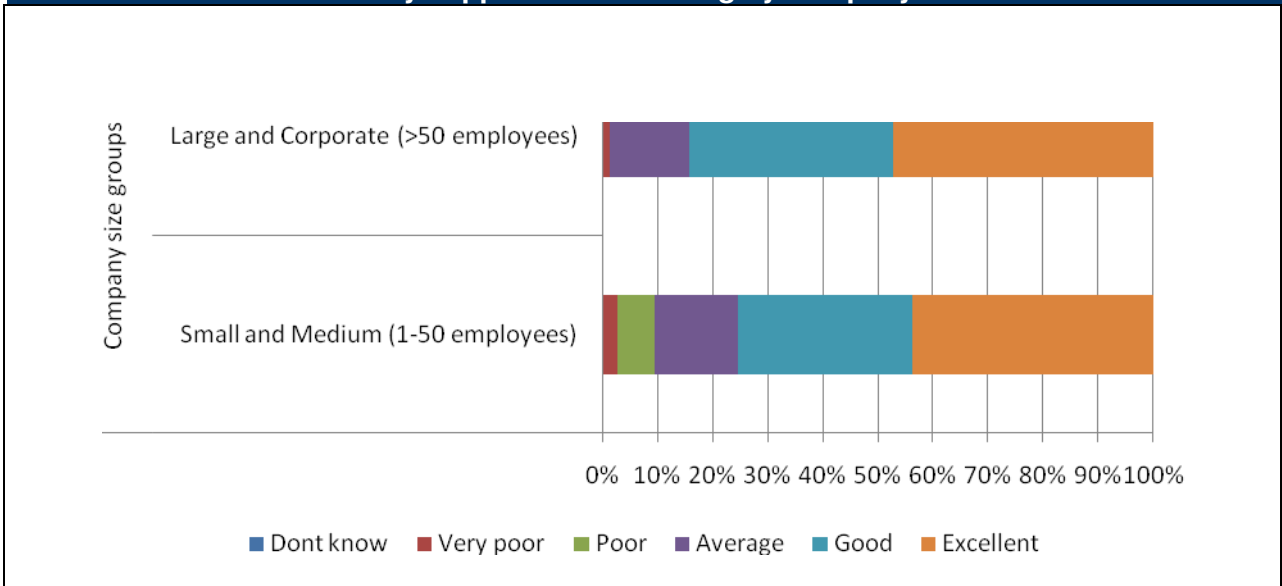
Source: BMI-T, 2009

Nkangala ratings are lowest.



Source: BMI-T, 2009

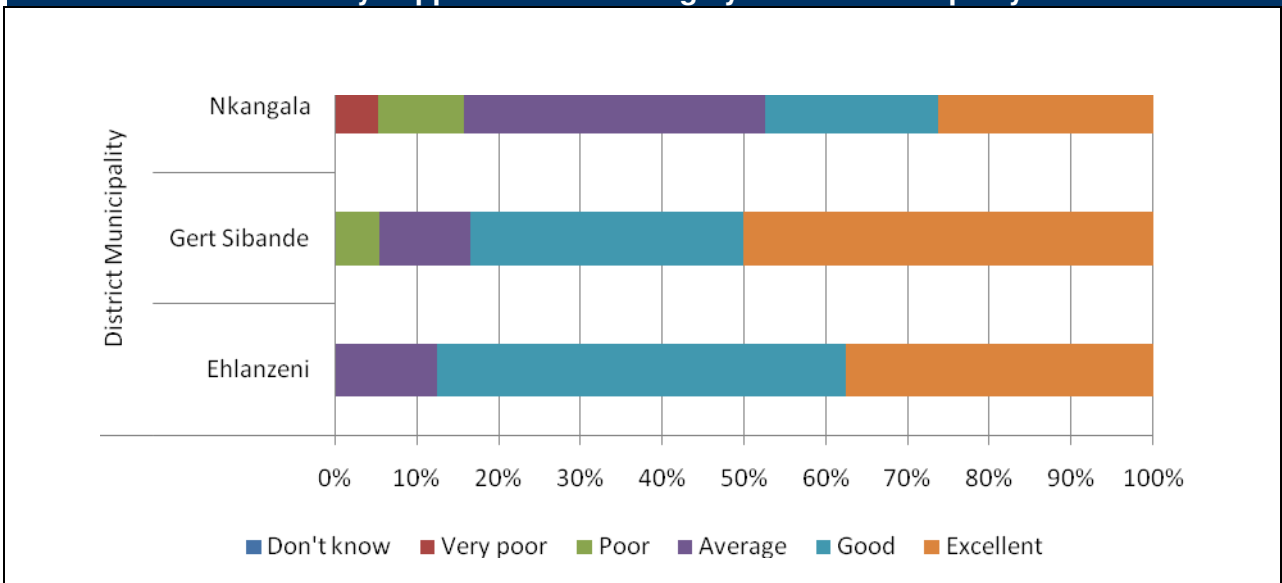
**Figure 49**  
**Primary supplier of LAN rating by company size**



Source: BMI-T, 2009

*WAN supplier rating segmentations*

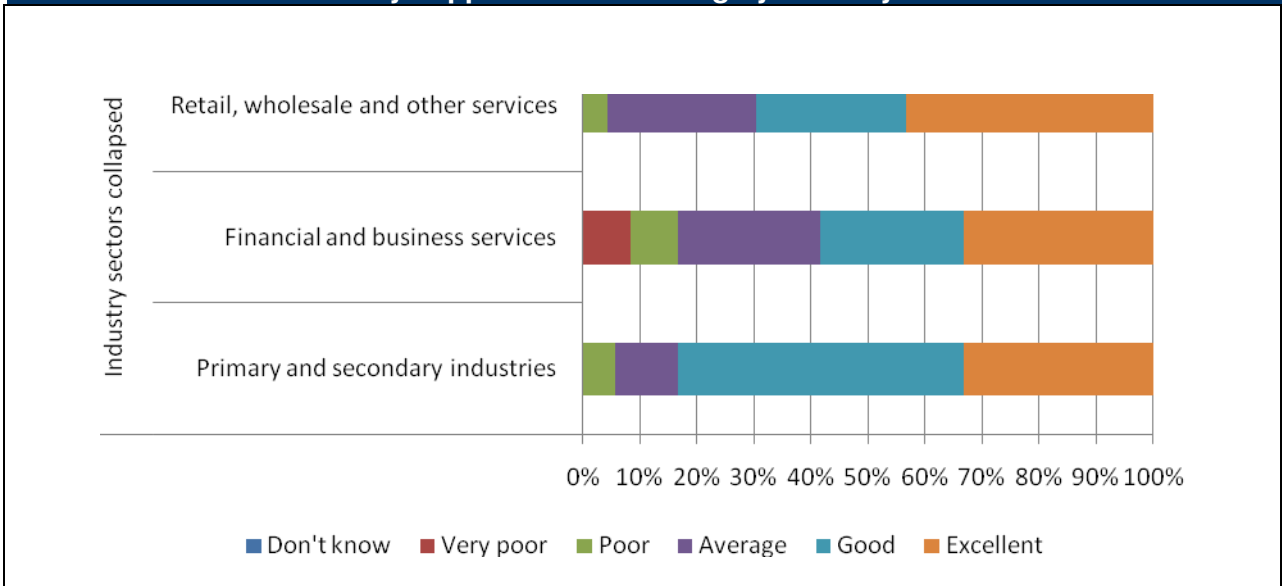
**Figure 50**  
**Primary supplier of WAN rating by district municipality**



Source: BMI-T, 2009

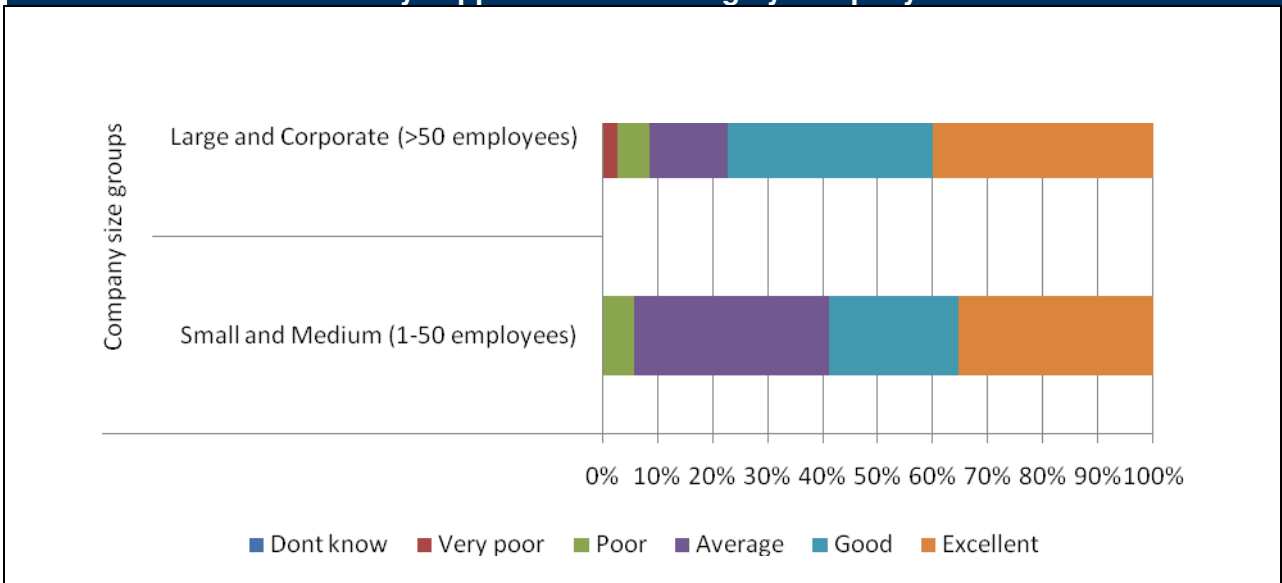


**Figure 51**  
**Primary supplier of WAN rating by industry sector**



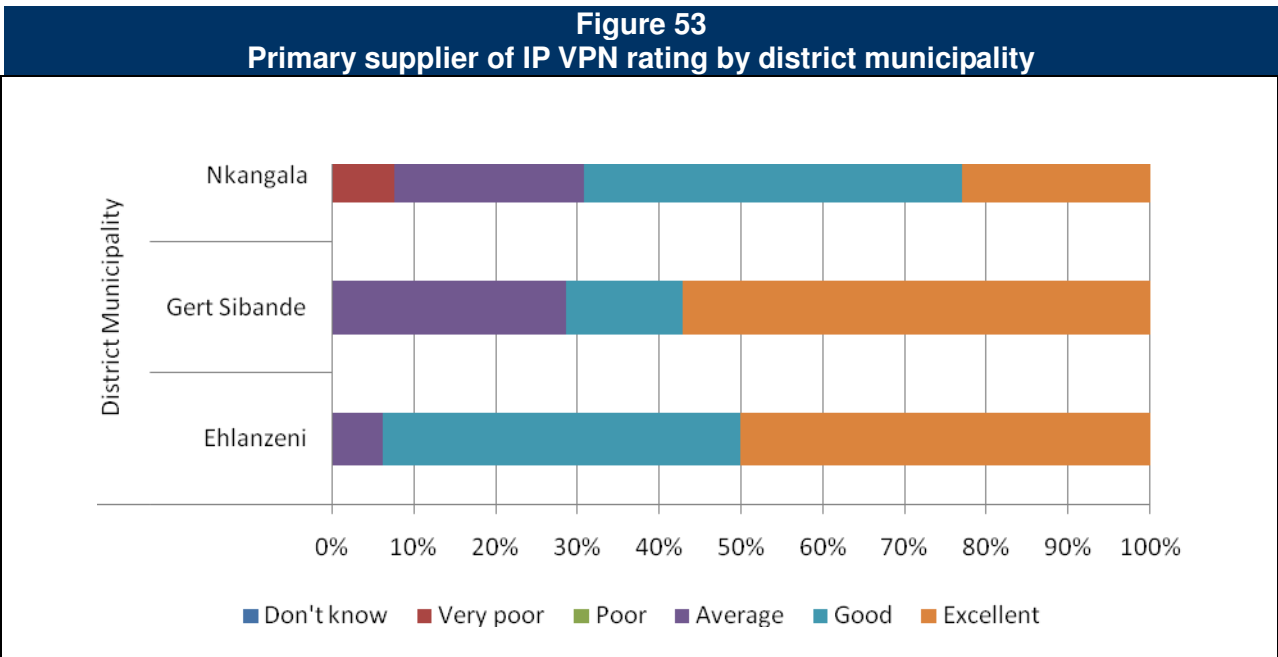
Source: BMI-T, 2009

**Figure 52**  
**Primary supplier of WAN rating by company size**

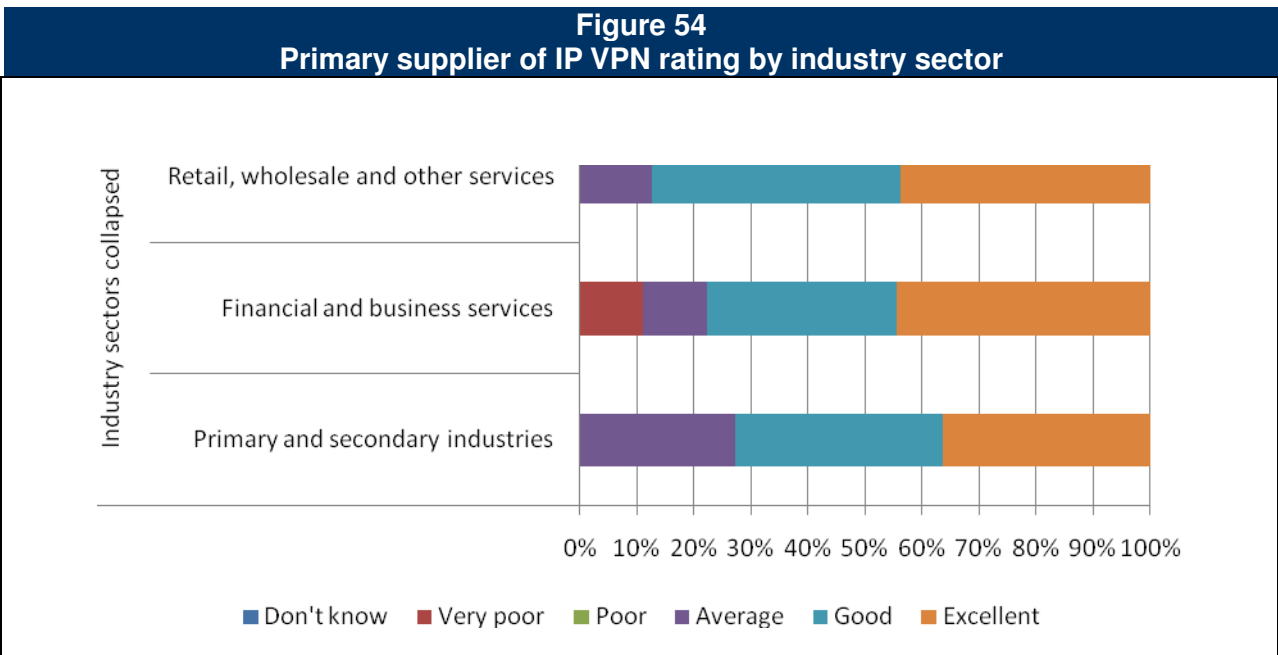


Source: BMI-T, 2009

IP VPN supplier rating segmentations

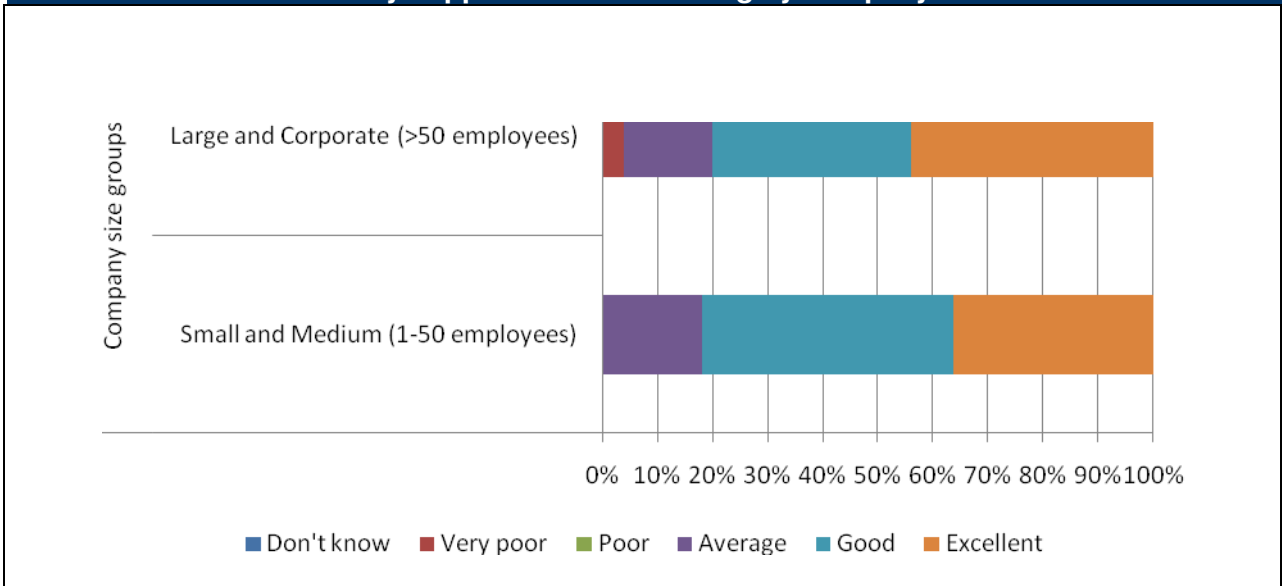


Source: BMI-T, 2009



Source: BMI-T, 2009

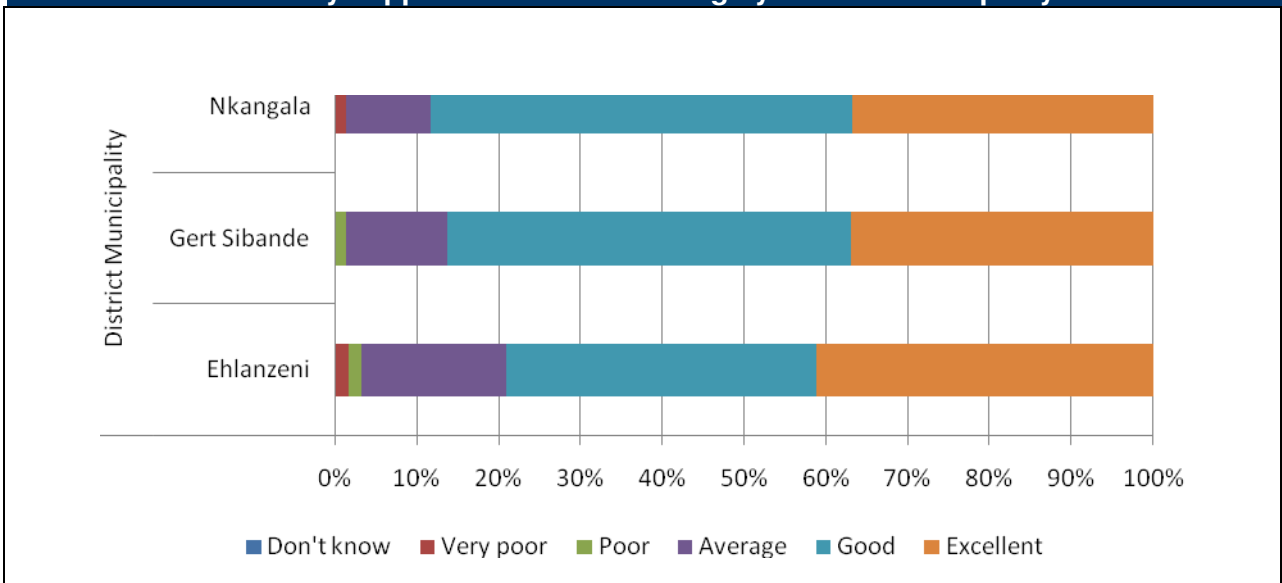
**Figure 55**  
**Primary supplier of IP VPN rating by company size**



Source: BMI-T, 2009

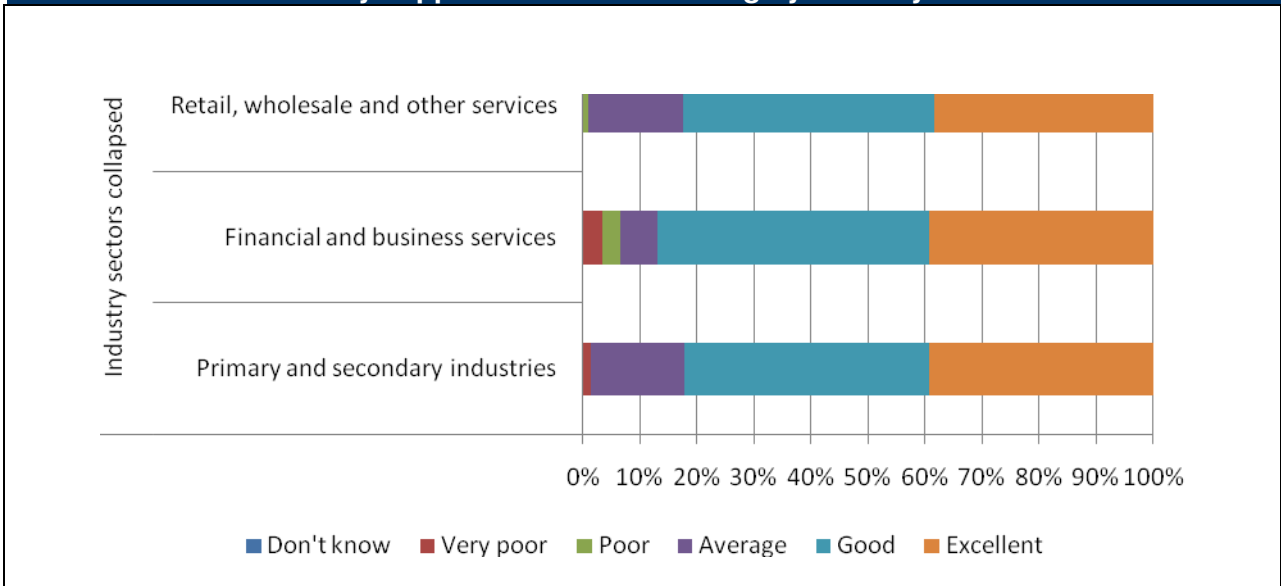
*Hardware supplier rating segmentations*

**Figure 56**  
**Primary supplier of hardware rating by district municipality**



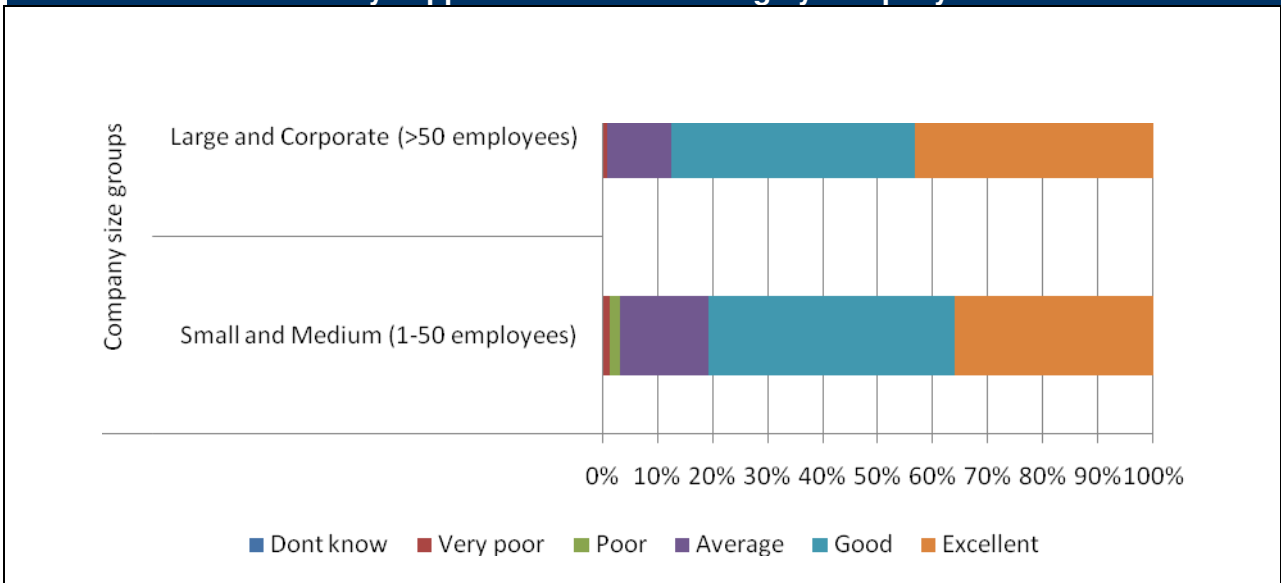
Source: BMI-T, 2009

**Figure 57**  
**Primary supplier of hardware rating by industry sector**



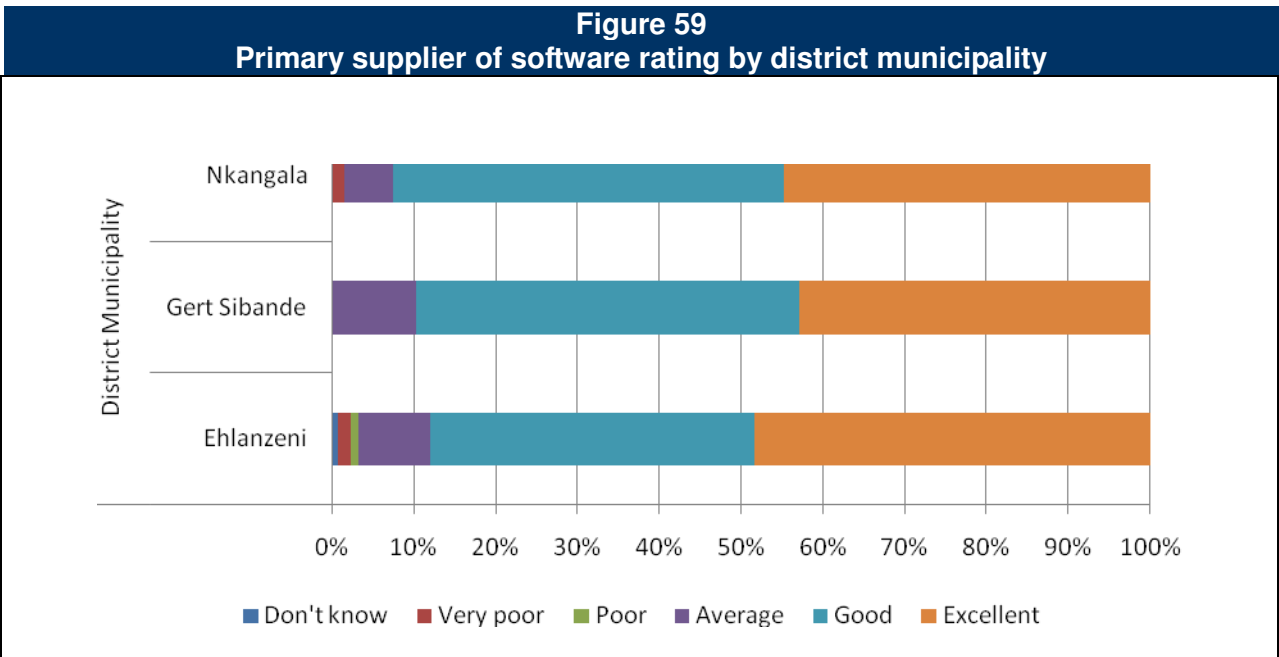
Source: BMI-T, 2009

**Figure 58**  
**Primary supplier of hardware rating by company size**

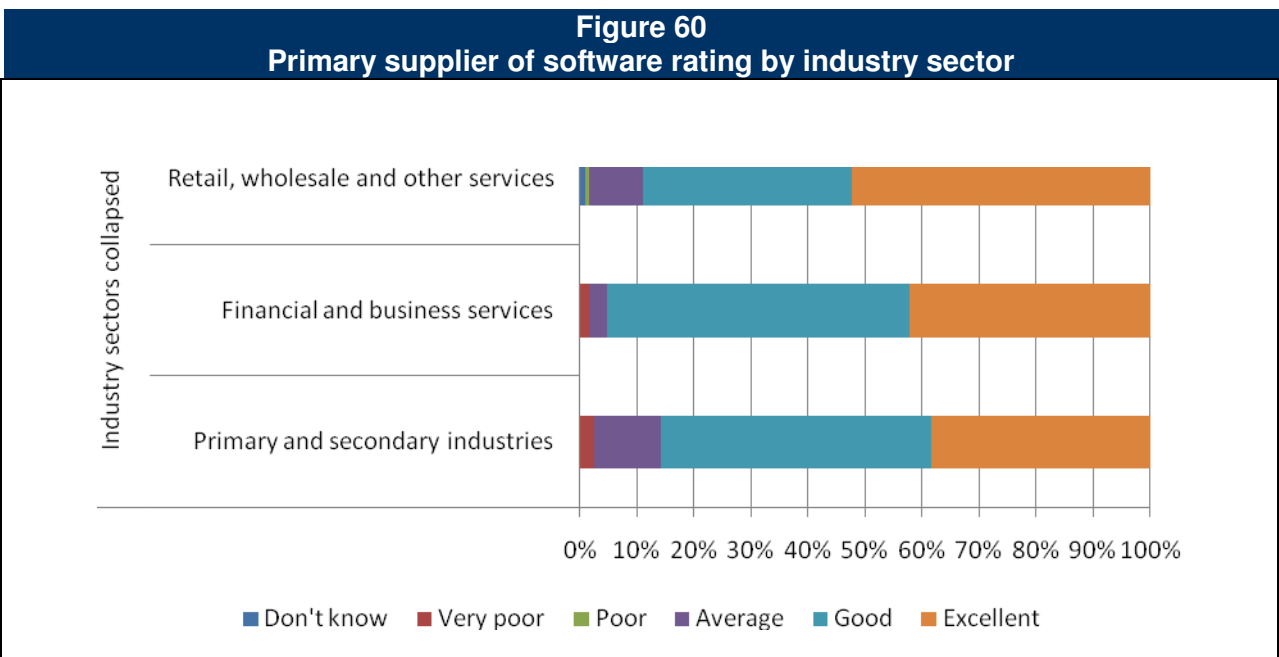


Source: BMI-T, 2009

Software supplier rating segmentations

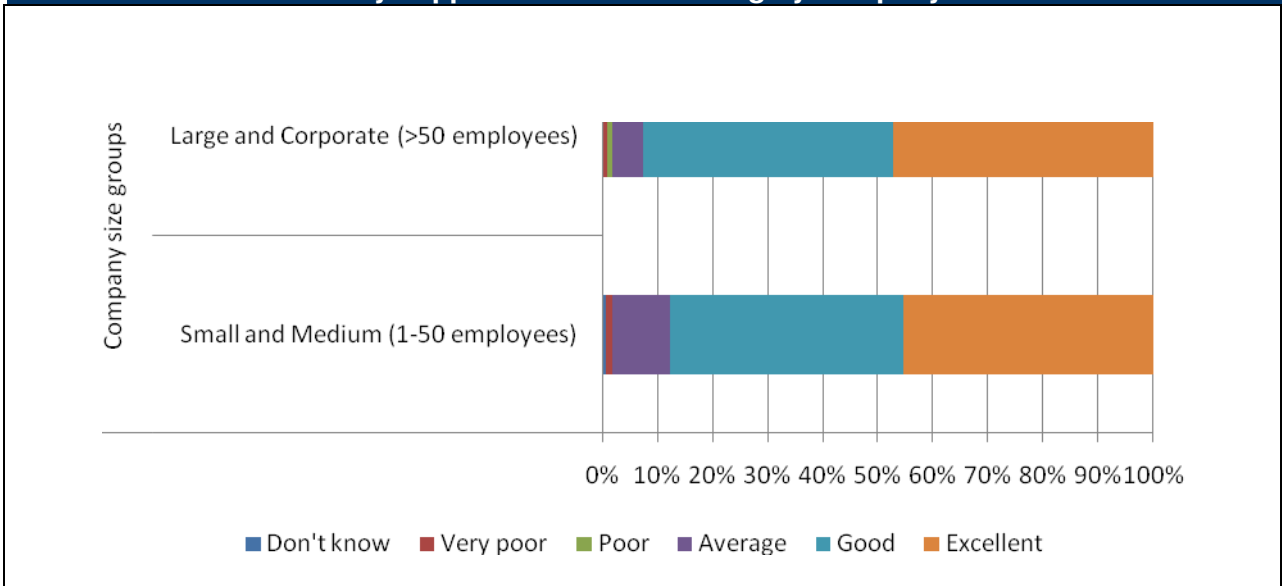


Source: BMI-T, 2009



Source: BMI-T, 2009

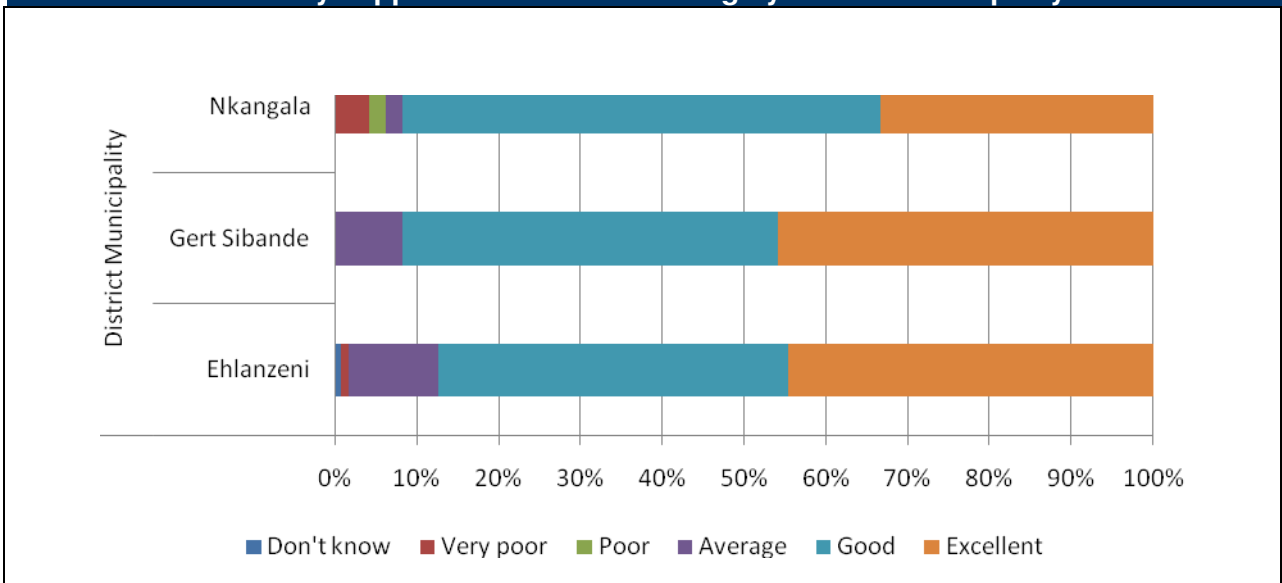
**Figure 61**  
**Primary supplier of software rating by company size**



Source: BMI-T, 2009

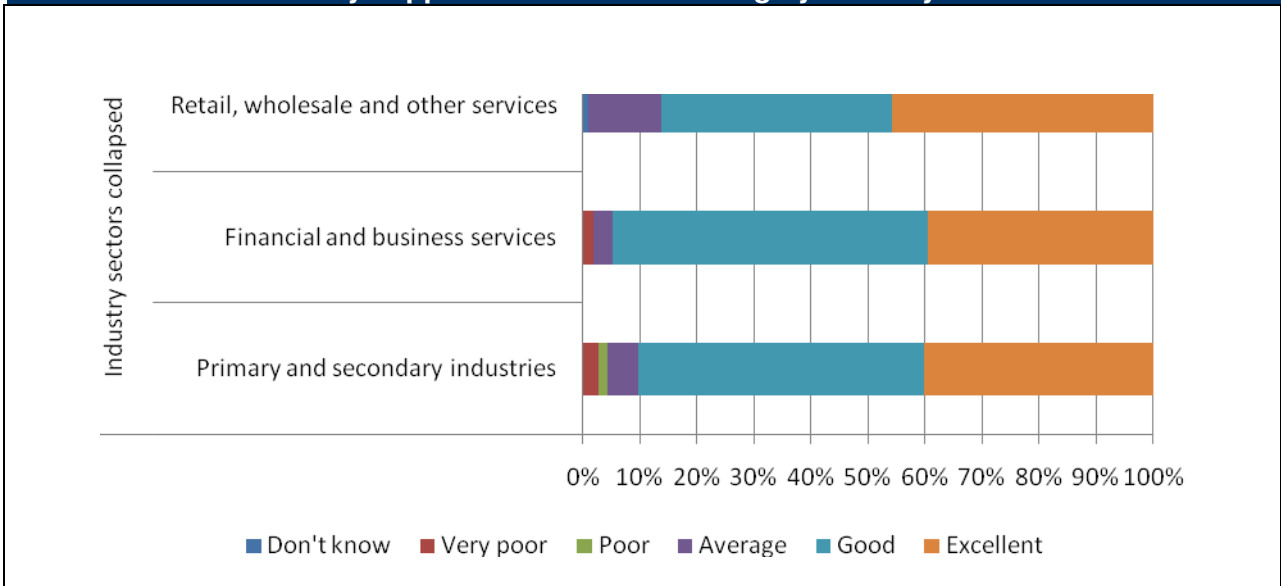
*IT services supplier rating segmentations*

**Figure 62**  
**Primary supplier of IT services rating by district municipality**



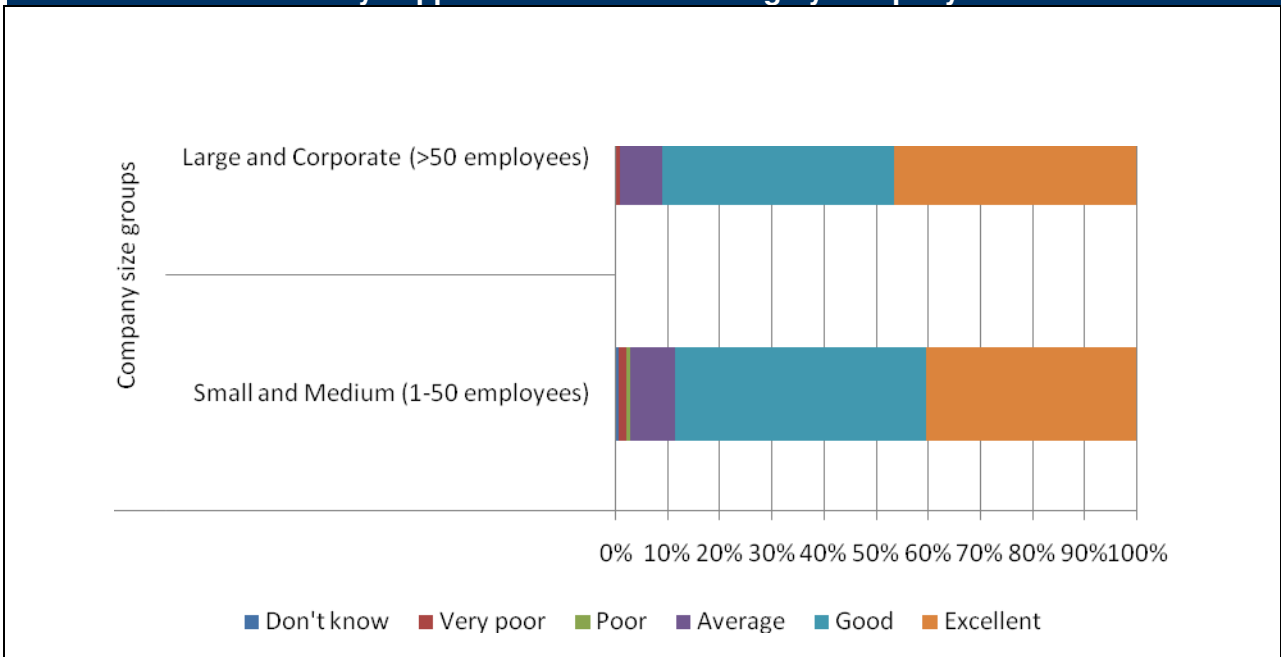
Source: BMI-T, 2009

**Figure 63**  
**Primary supplier of IT services rating by industry sector**



Source: BMI-T, 2009

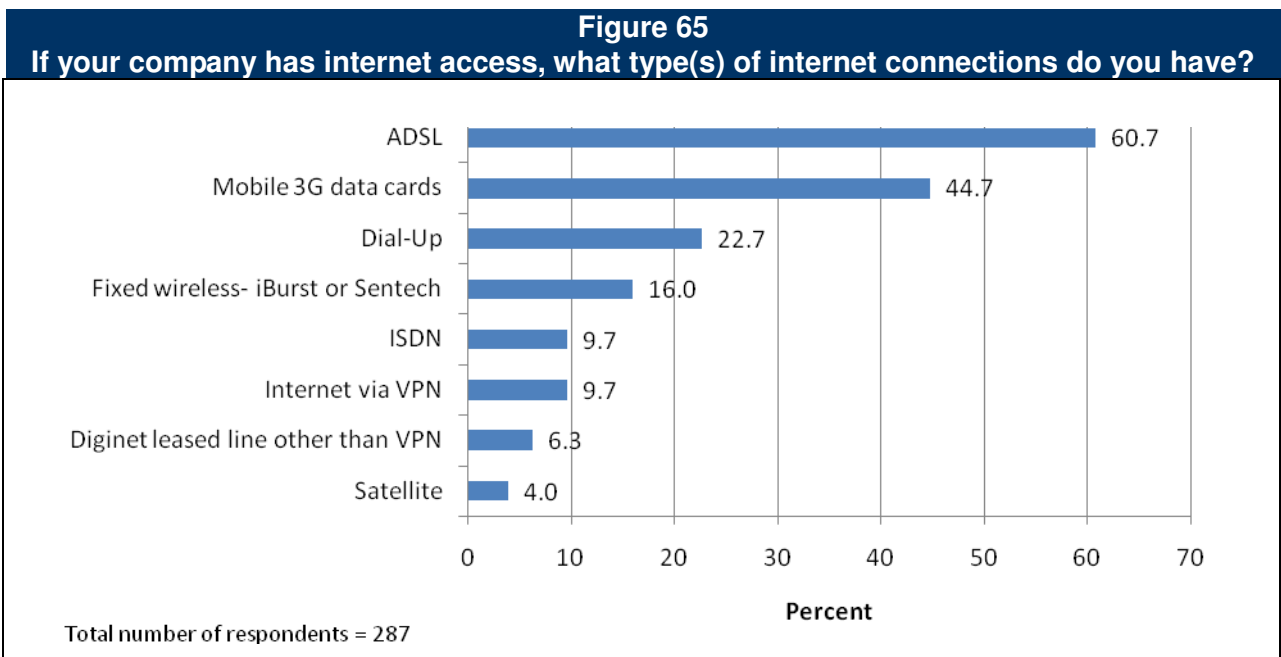
**Figure 64**  
**Primary supplier of IT services rating by company size**



Source: BMI-T, 2009

### **Internet access connection types**

The respondents were asked to indicate the different types of internet access connections they have, if they have internet access.



Source: BMI-T, 2009

The most common form of internet access is ADSL (61%), followed by mobile 3G data cards (45%).

Dial-up is quite a high percentage (23%) considering it is a very old technology with slow speeds and low bandwidth which can be a hindrance to a business's productivity.

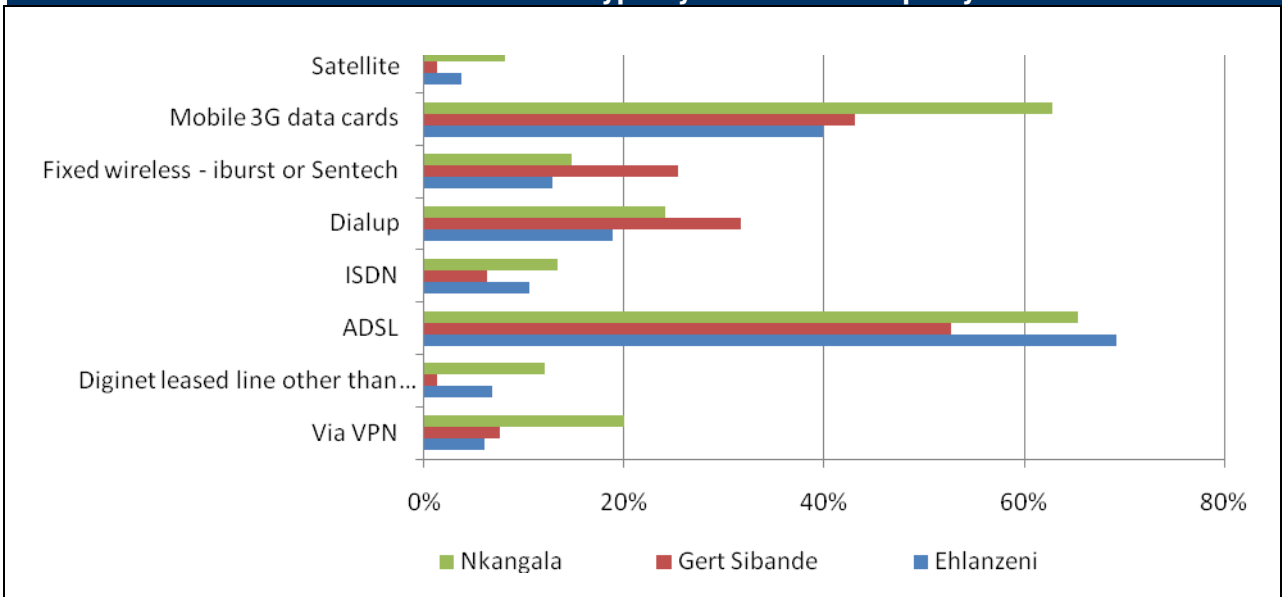
The fact that not all respondents have internet access and that almost half rely on mobile data cards and 23% use dial-up to get access shows a lower reliance on sophisticated technology in Mpumalanga, this can be due to a lack of available infrastructure, lack of available funds or a lack of ICT knowledge.

### **Internet access connection type segmentations**

The following figures show segmentations of internet connection type by district, industry sector and company size.



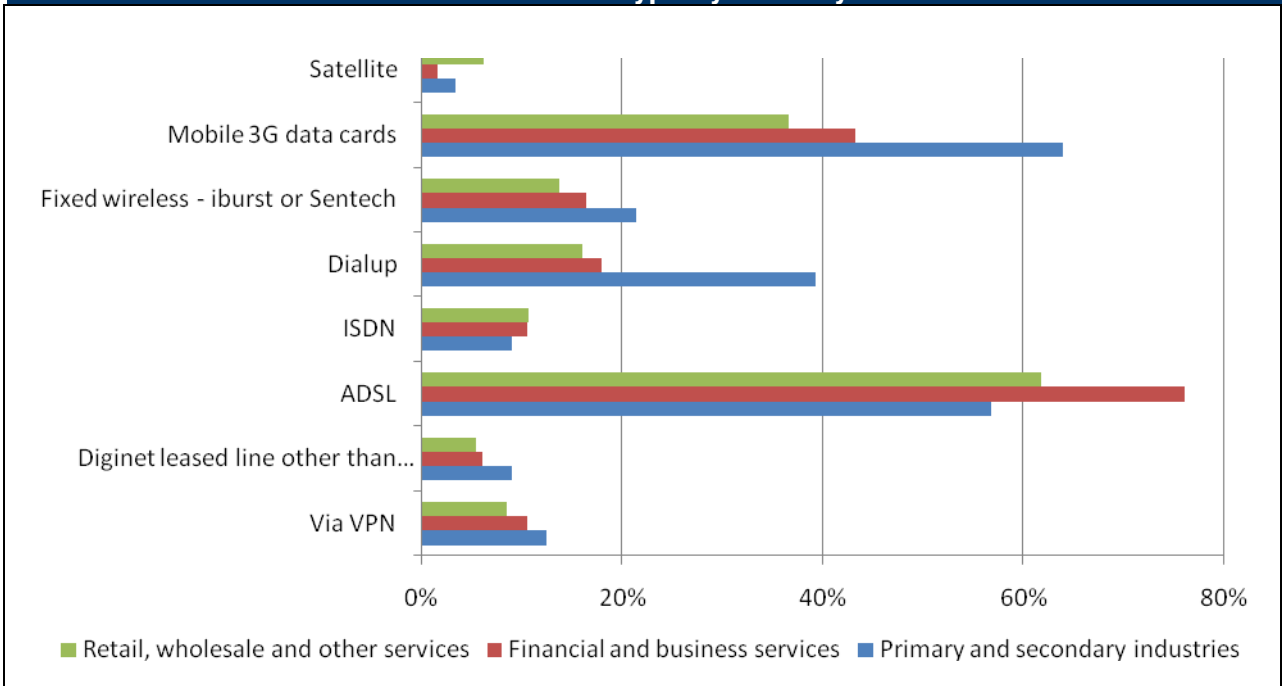
**Figure 66**  
Internet connection type by district municipality



Source: BMI-T, 2009

Gert Sibande lags for ADSL connections and has the highest dial-up connections; Nkangala has the highest mobile 3G card connections.

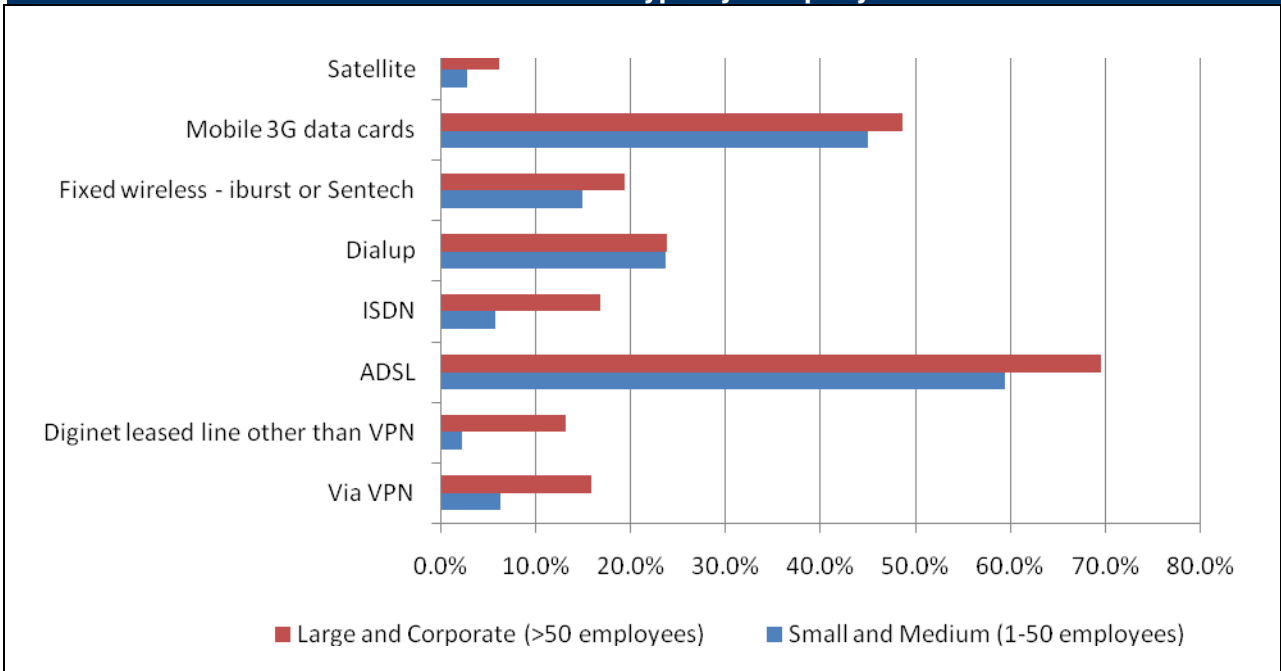
**Figure 67**  
Internet connection type by industry sector



Source: BMI-T, 2009

Primary and secondary industries have higher usage of dial-up and mobile 3G cards than the other 2 grouped industry sectors.

**Figure 68**  
**Internet connection type by company size**



Source: BMI-T, 2009

Larger companies generally have more sophisticated internet connections, although there is still over 20% with dial-up.

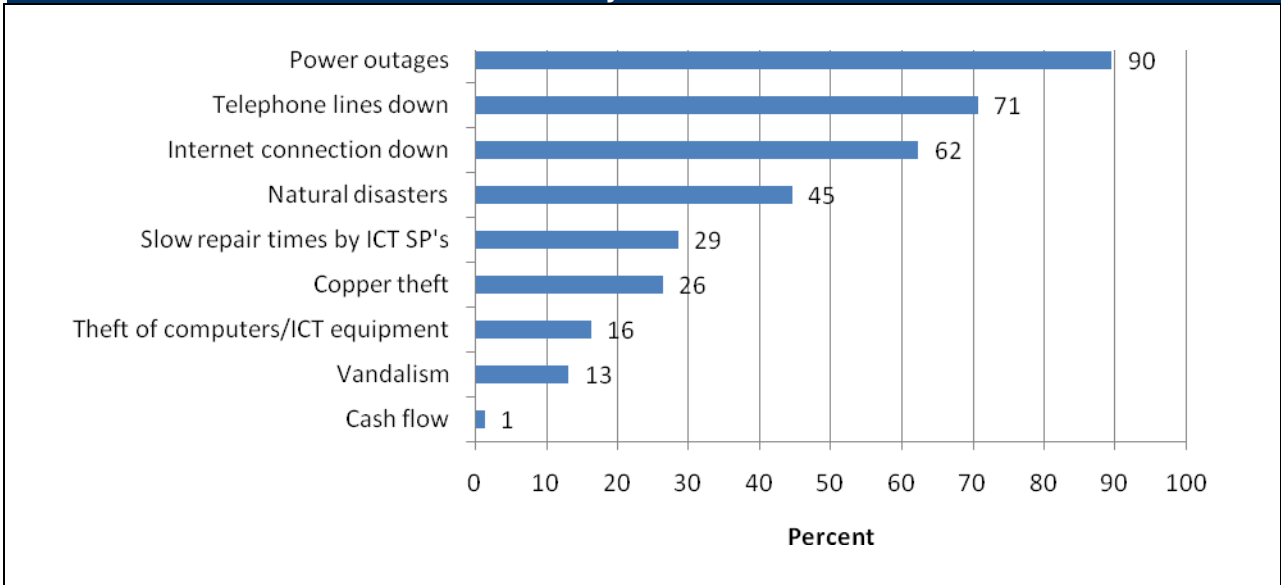
### IT and Telecoms Issues

This section covers the problems or issues encountered with regard to IT and Telecoms infrastructure/services and the effects of these problems or issues on their companies.

Respondents were asked:

Which of the following problems have affected your IT and telecoms services in the past year and rate how badly it has affected your service delivery? (Rating 0 none –5 extremely for each one)

**Figure 69**  
Which of the following problems have affected your IT and Telecoms services in the past year?

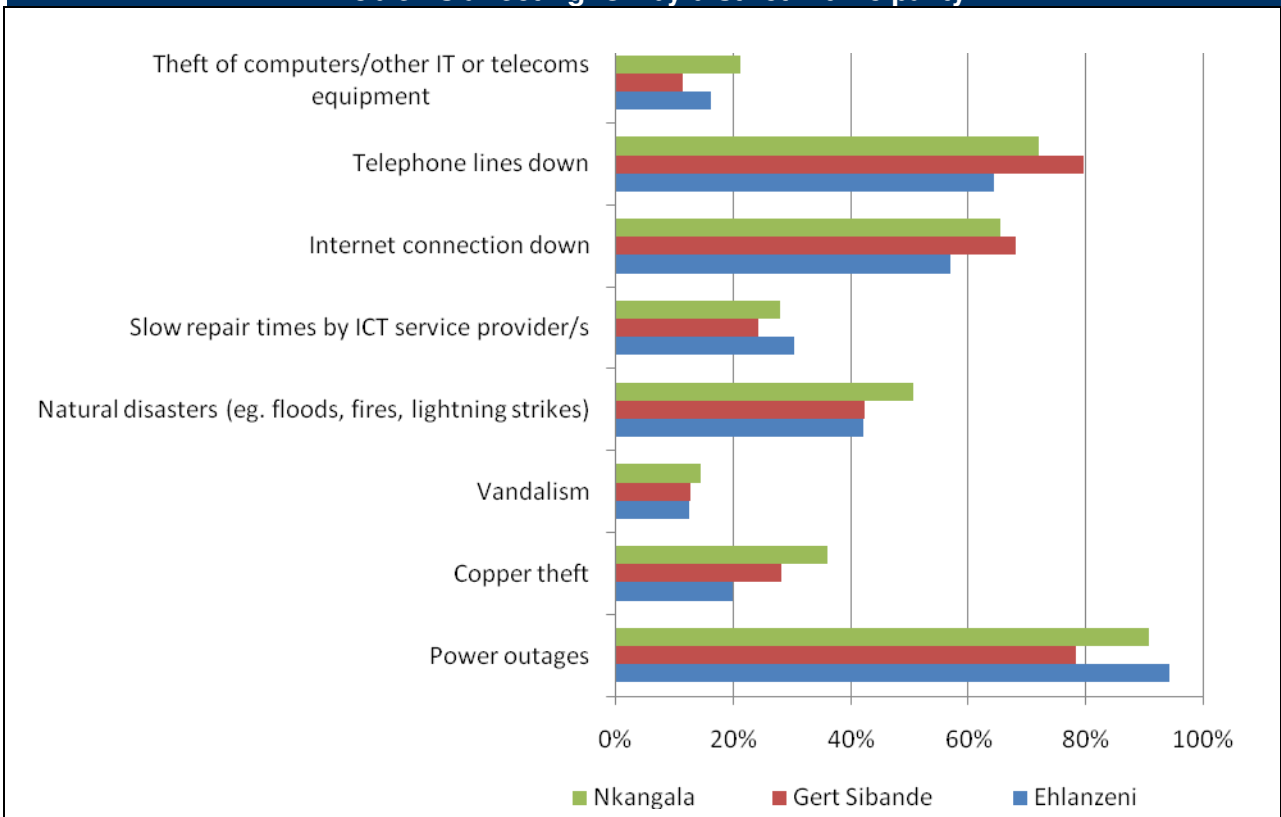


Source: BMI-T, 2009

Infrastructure problems are tops.

The figures below show segmentations of the problems experienced.

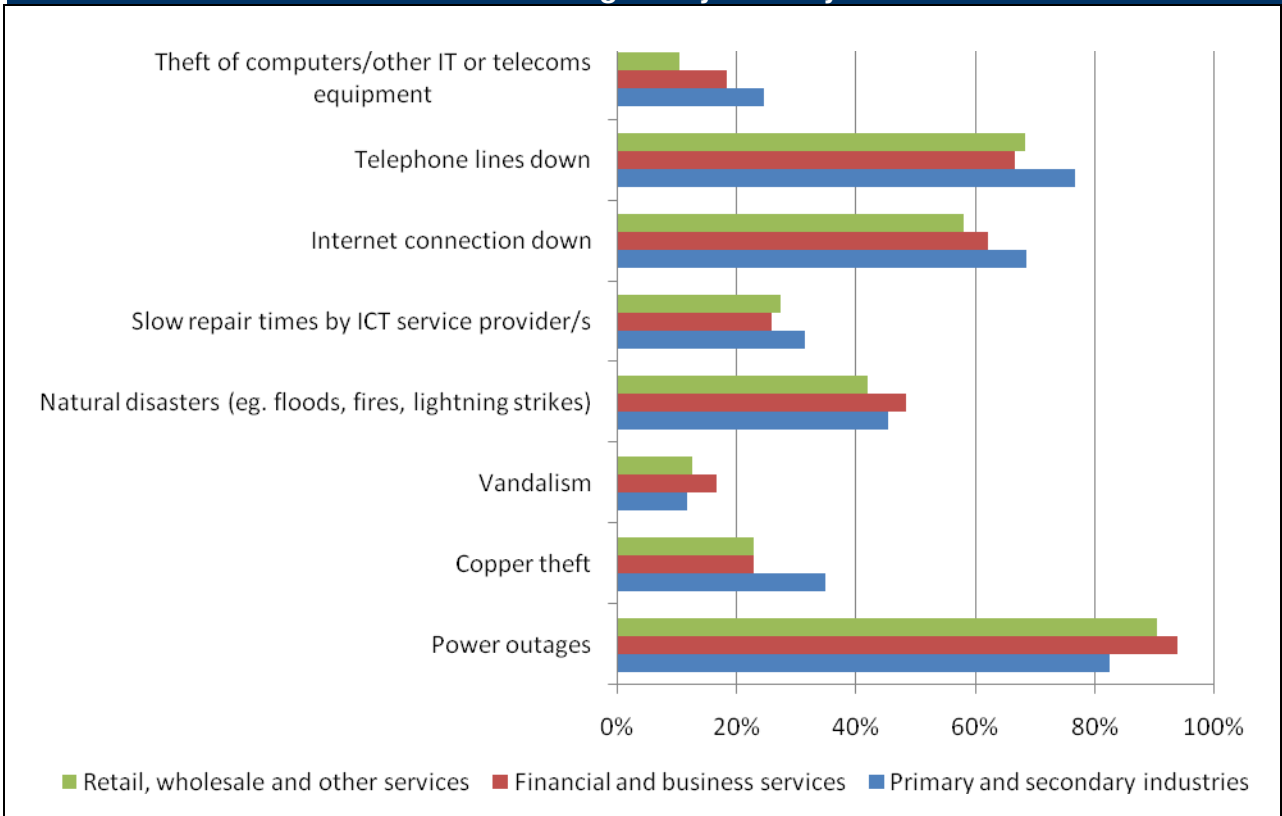
**Figure 70**  
Problems affecting ICT by district municipality



Source: BMI-T, 2009

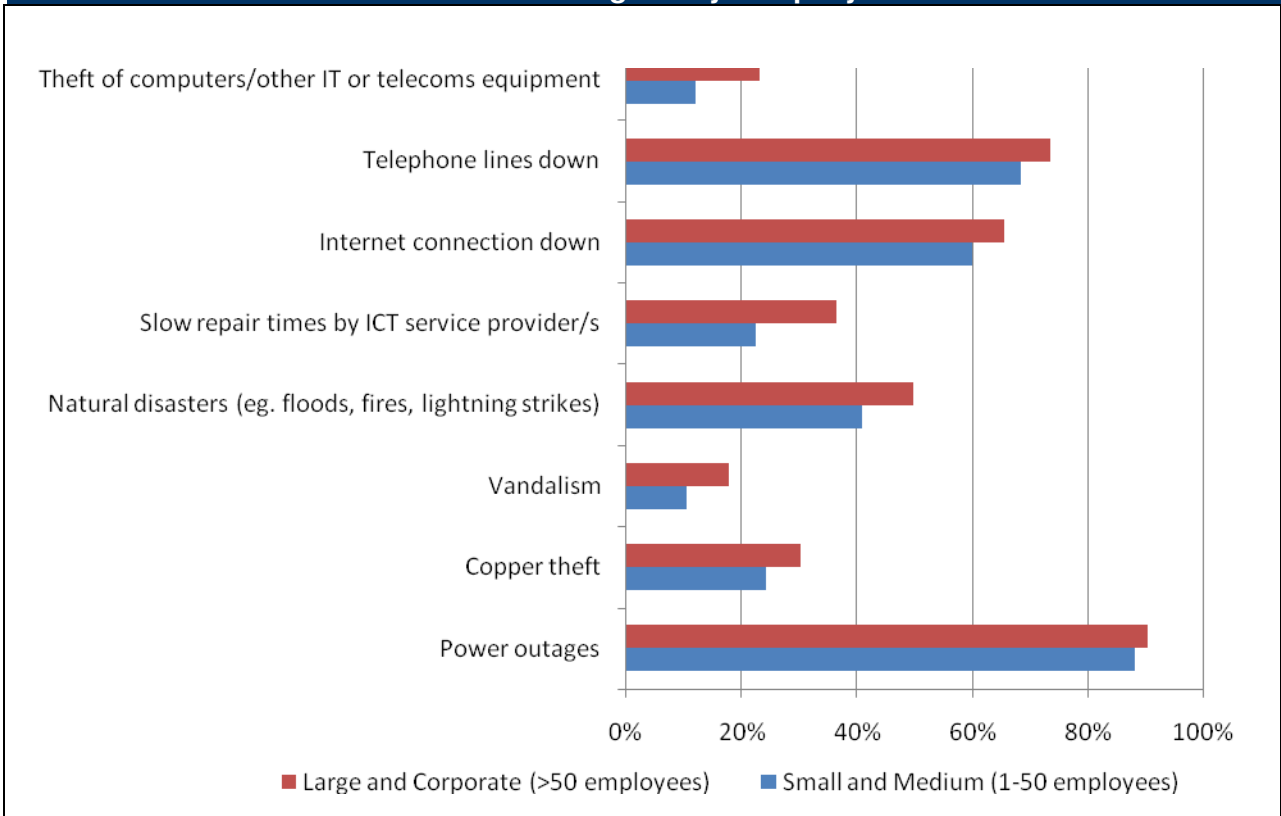
The districts, industries and company size segmentations are quite similar.

**Figure 71**  
**Problems affecting ICT by industry sector**



Source: BMI-T, 2009

**Figure 72**  
**Problems affecting ICT by company size**

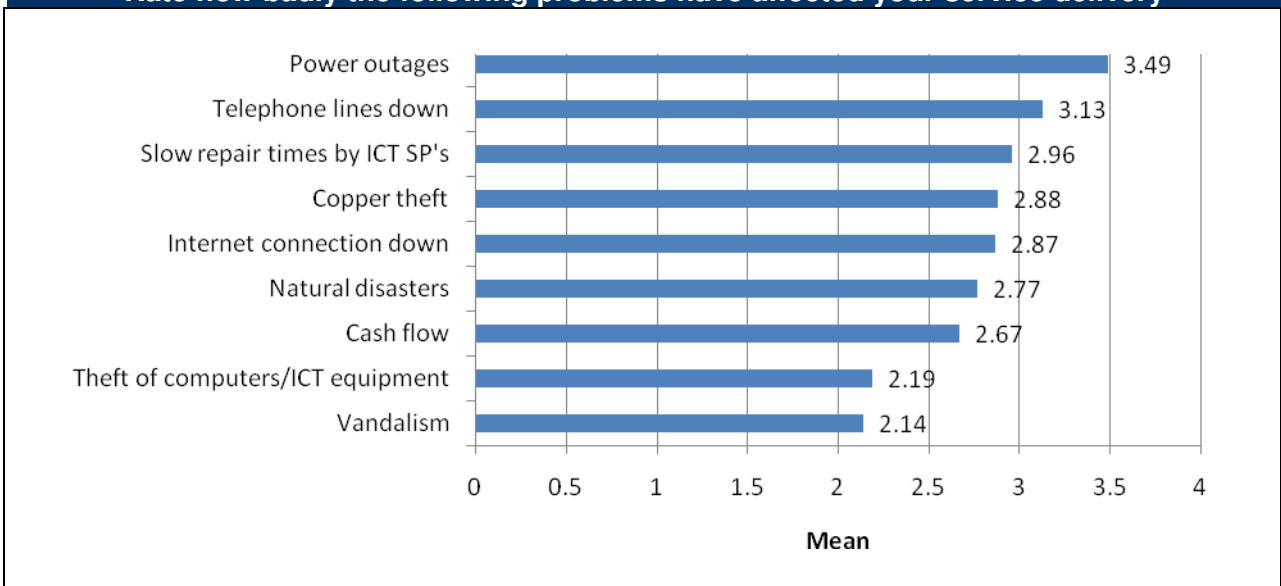


Source: BMI-T, 2009

*Rating of effect of problems*

The respondents were also asked to rate how badly these problems affected them.

**Figure 73**  
**Rate how badly the following problems have affected your service delivery**

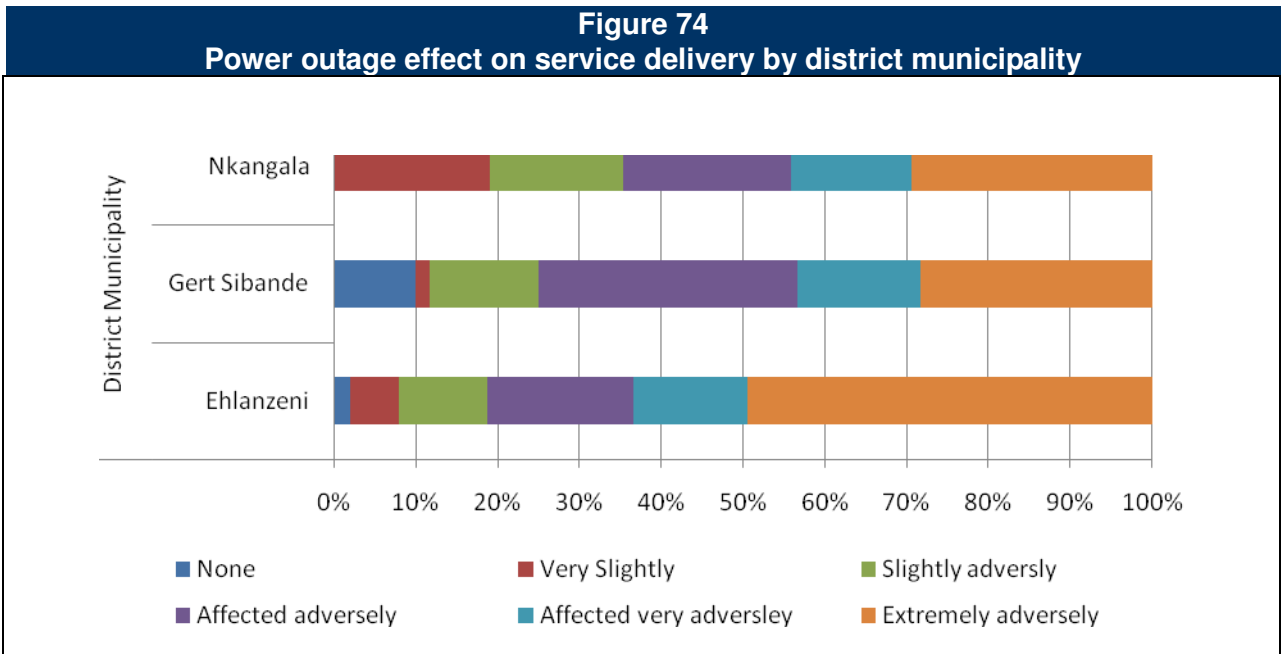


Source: BMI-T, 2009

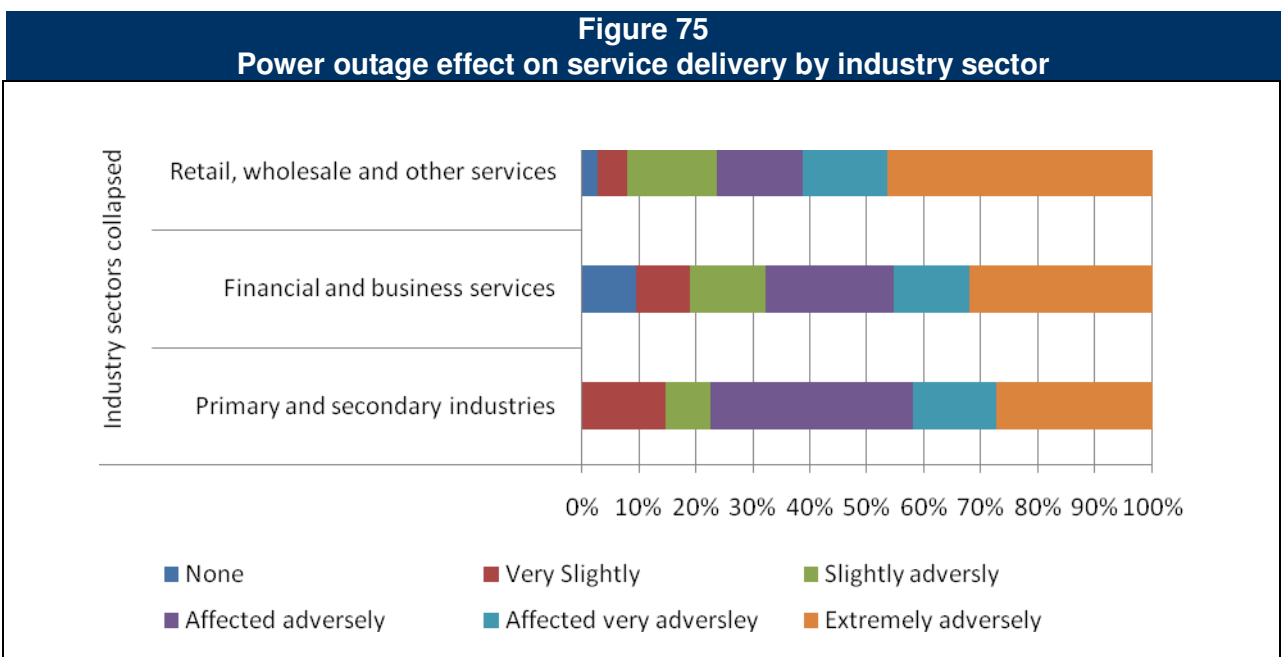
The average (mean) ratings show similar order of effect apart from slow repair times by ICT service providers, which has a greater effect.

*Segmentations of problem effects*

The figures below show the segmentations.

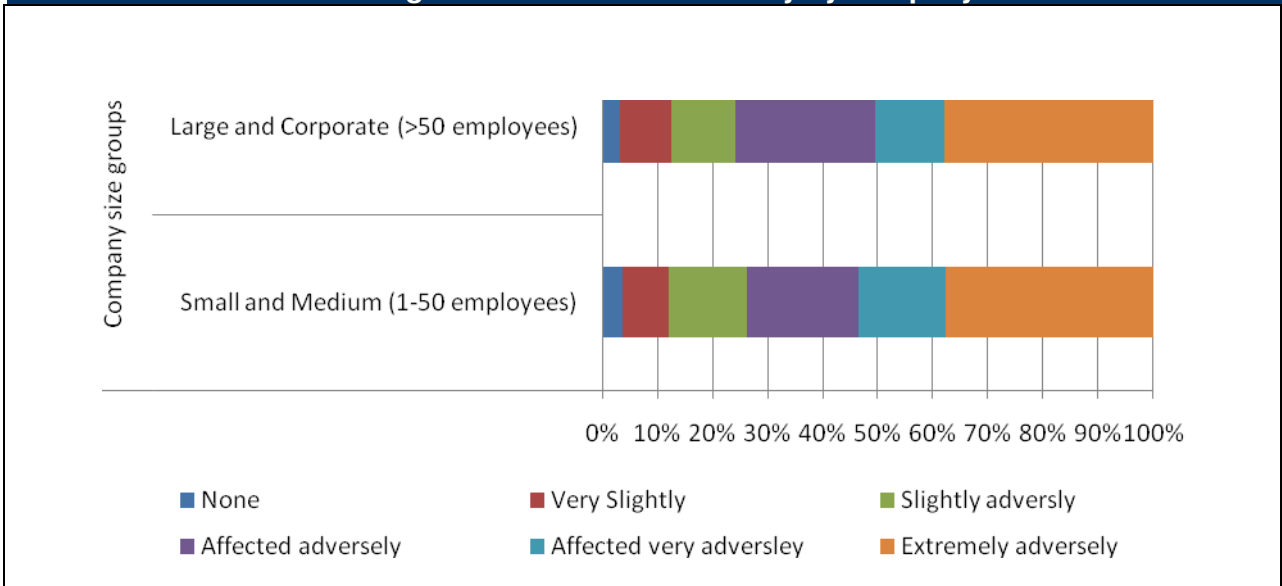


Source: BMI-T, 2009



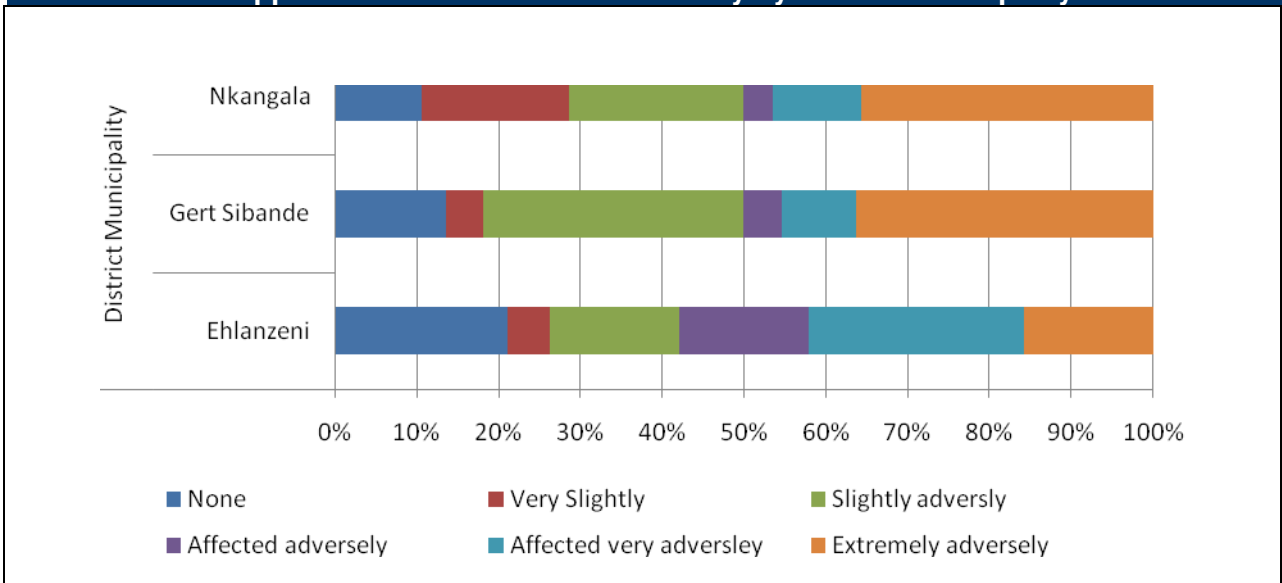
Source: BMI-T, 2009

**Figure 76**  
**Power outage effect on service delivery by company size**



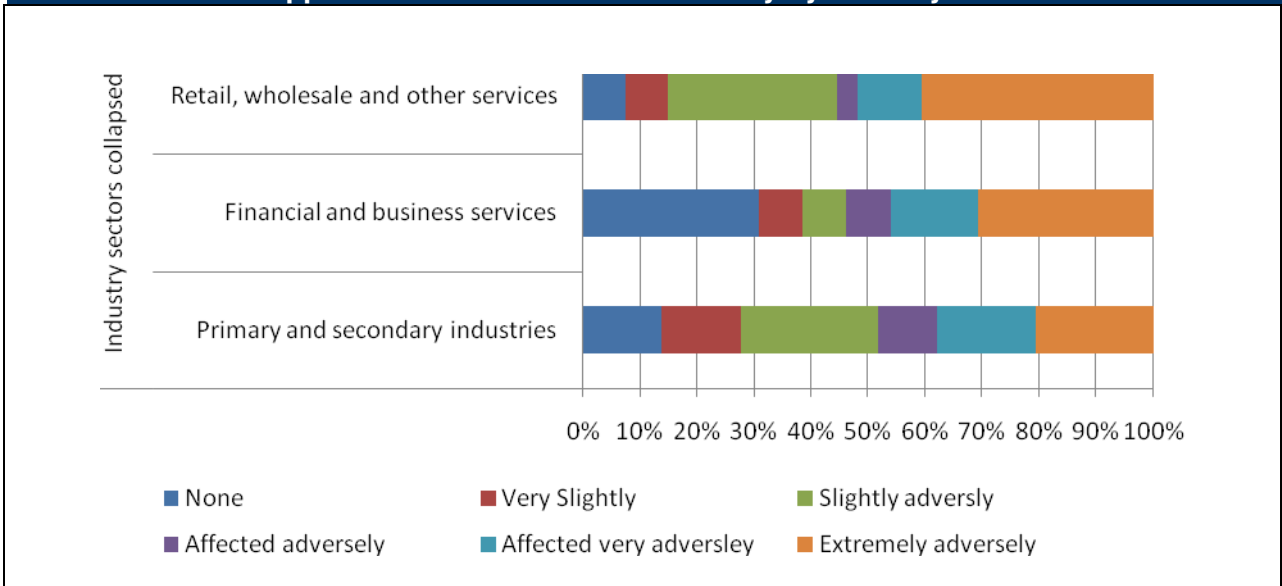
Source: BMI-T, 2009

**Figure 77**  
**Copper theft effect on service delivery by district municipality**



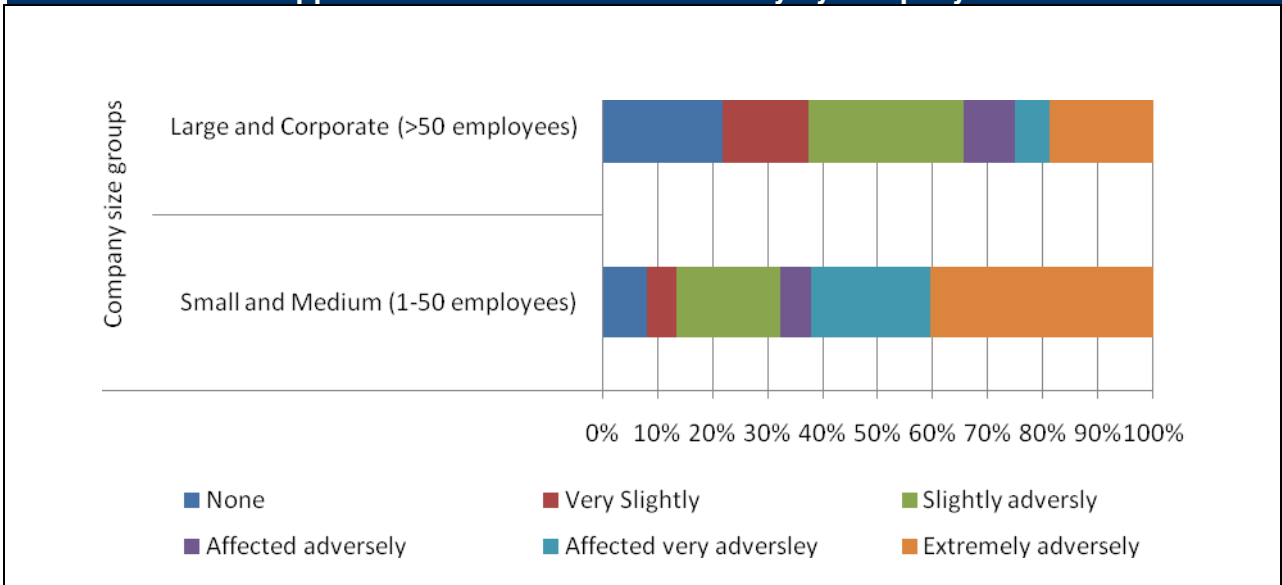
Source: BMI-T, 2009

**Figure 78**  
Copper theft effect on service delivery by industry sector



Source: BMI-T, 2009

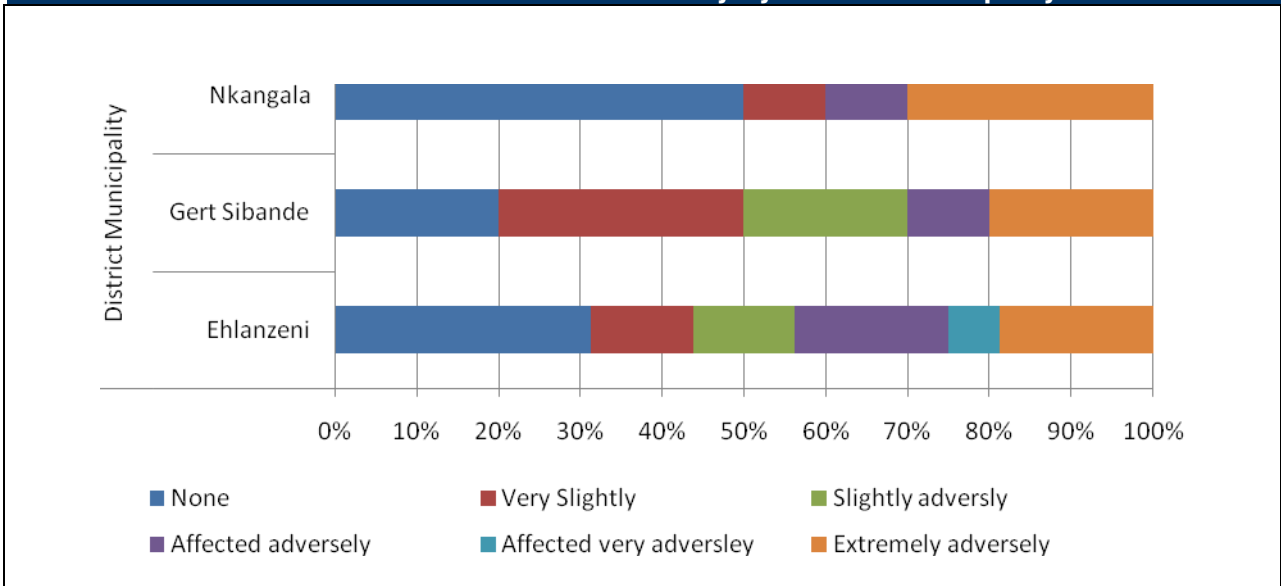
**Figure 79**  
Copper theft effect on service delivery by company size



Source: BMI-T, 2009

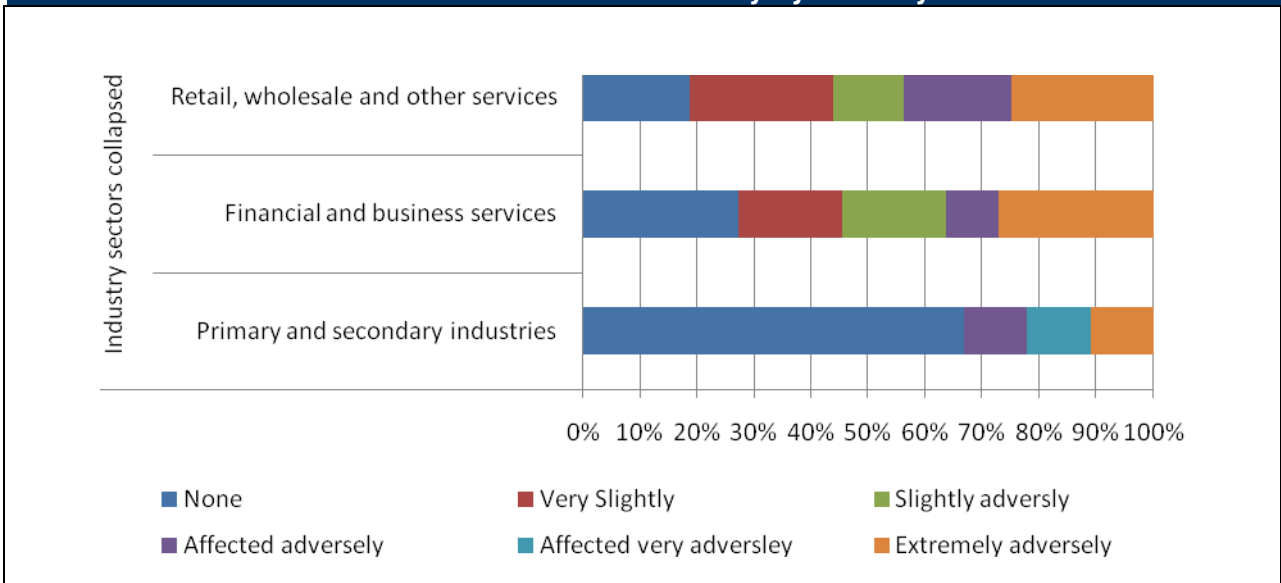


**Figure 80**  
**Vandalism effect on service delivery by district municipality**



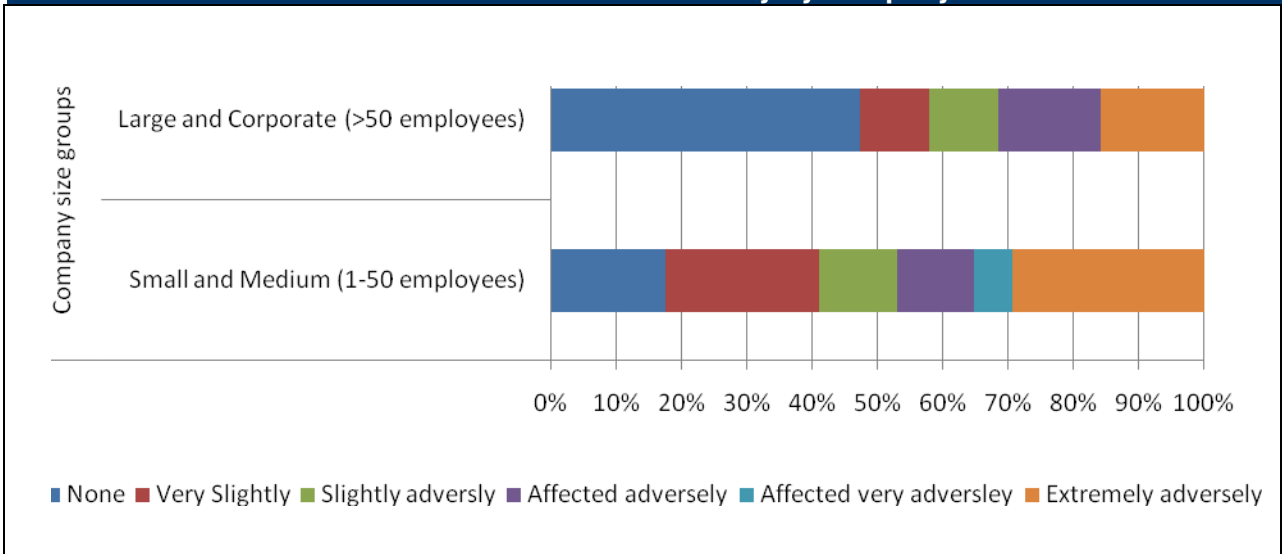
Source: BMI-T, 2009

**Figure 81**  
**Vandalism effect on service delivery by industry sector**



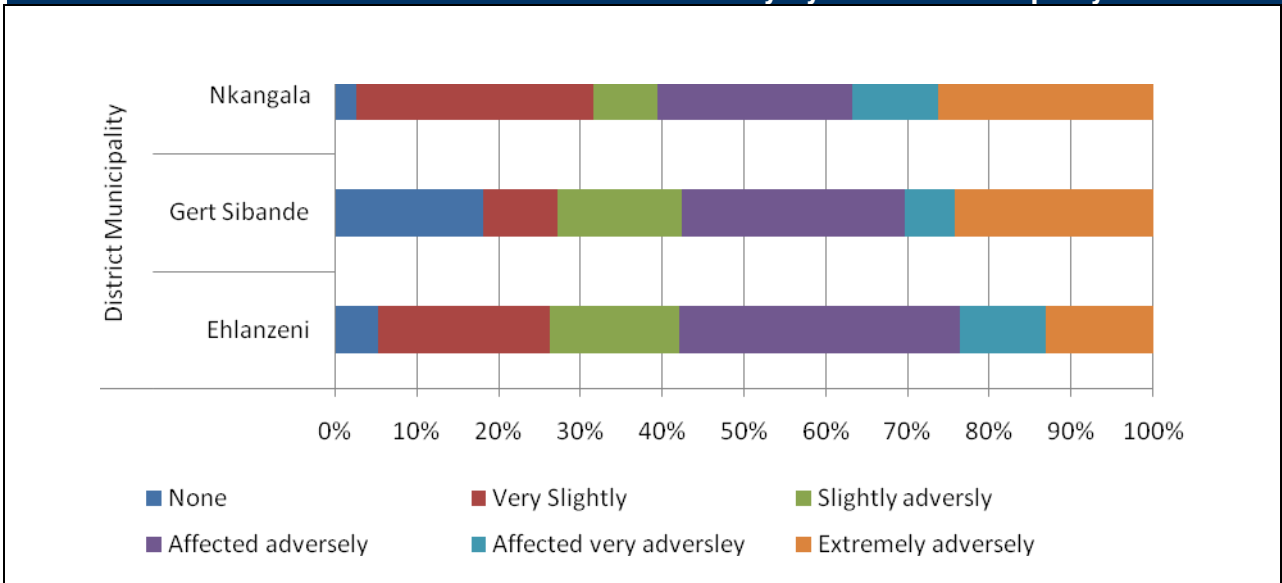
Source: BMI-T, 2009

**Figure 82**  
**Vandalism effect on service delivery by company size**



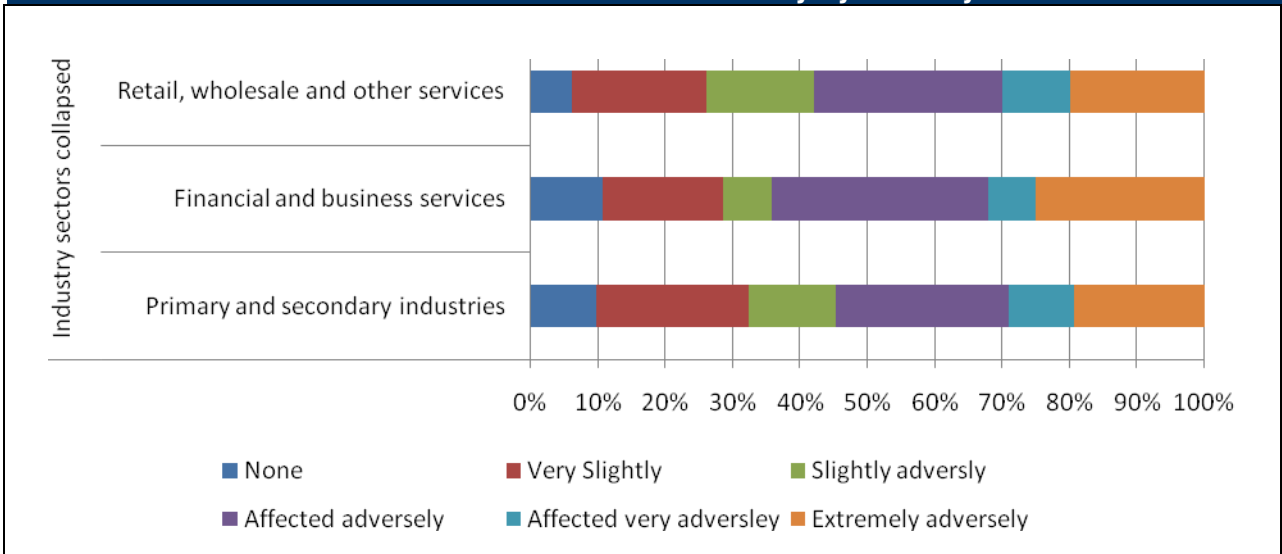
Source: BMI-T, 2009

**Figure 83**  
**Natural disasters effect on service delivery by district municipality**



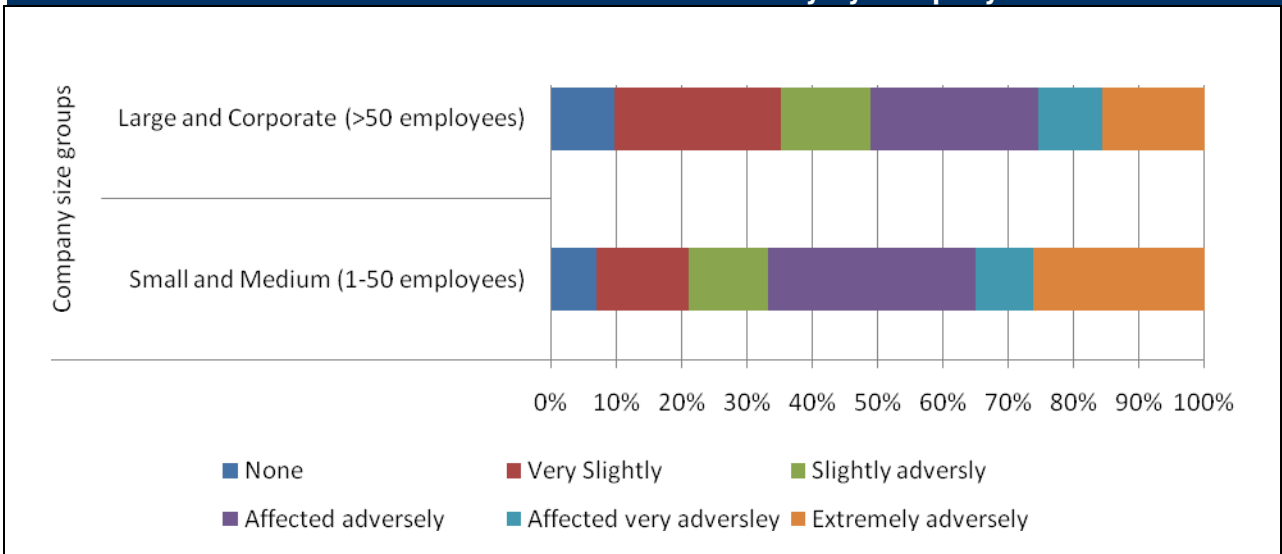
Source: BMI-T, 2009

**Figure 84**  
**Natural disasters effect on service delivery by industry sector**



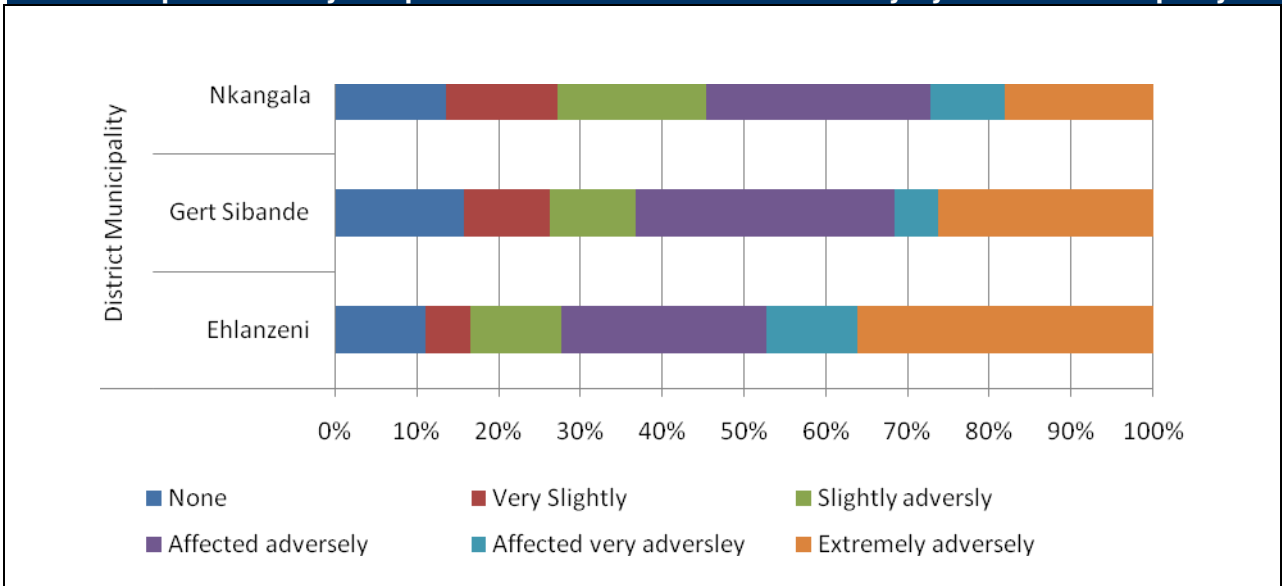
Source: BMI-T, 2009

**Figure 85**  
**Natural disasters effect on service delivery by company size**



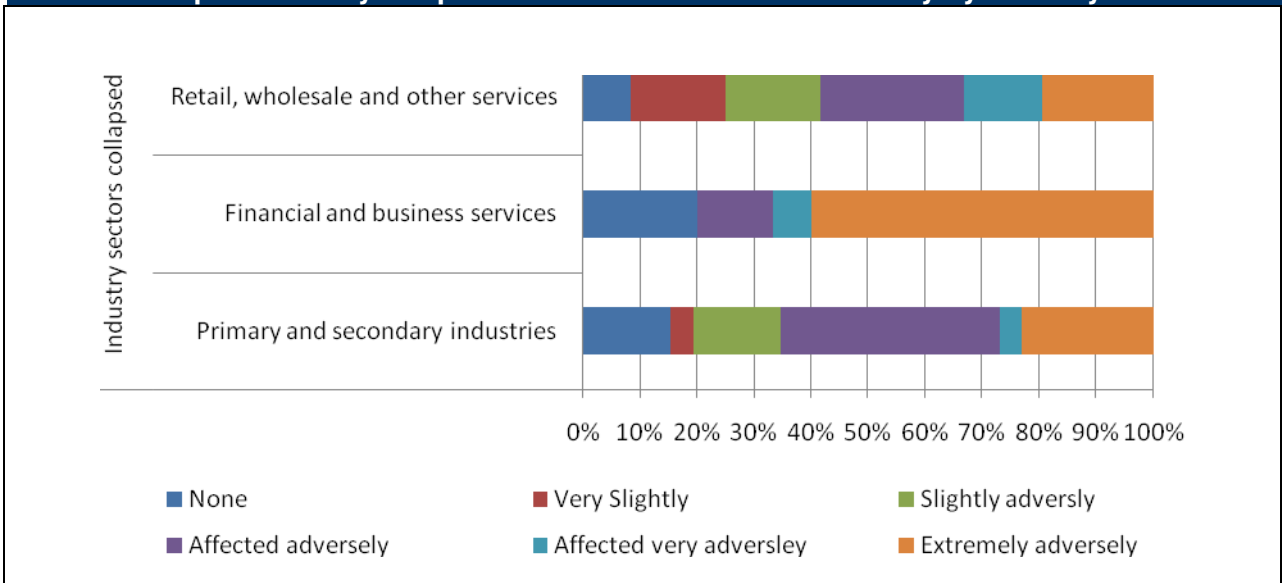
Source: BMI-T, 2009

**Figure 86**  
**Slow repair times by ICT providers' effect on service delivery by district municipality**



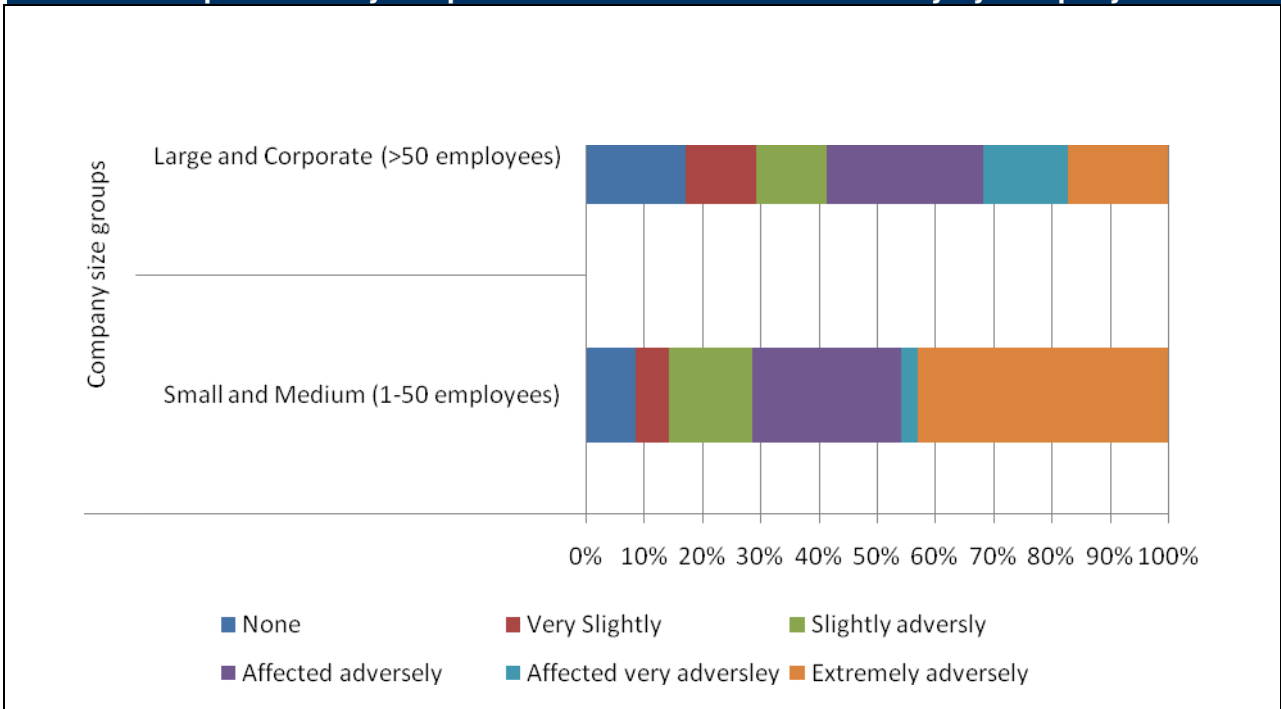
Source: BMI-T, 2009

**Figure 87**  
**Slow repair times by ICT providers' effect on service delivery by industry sector**



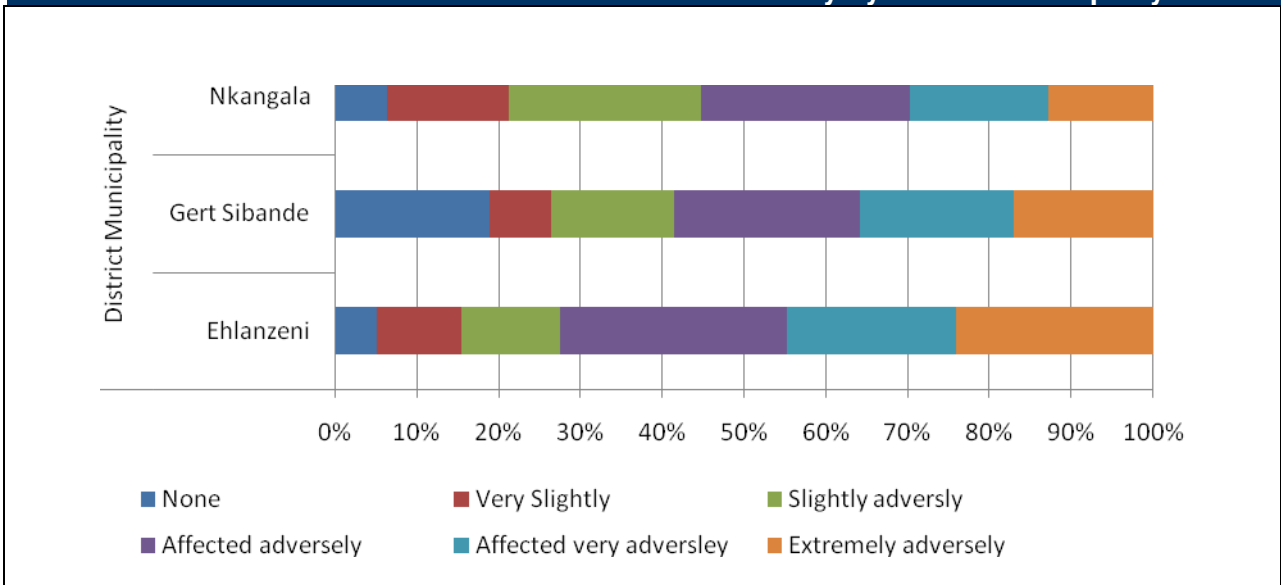
Source: BMI-T, 2009

**Figure 88**  
**Slow repair times by ICT providers' effect on service delivery by company size**



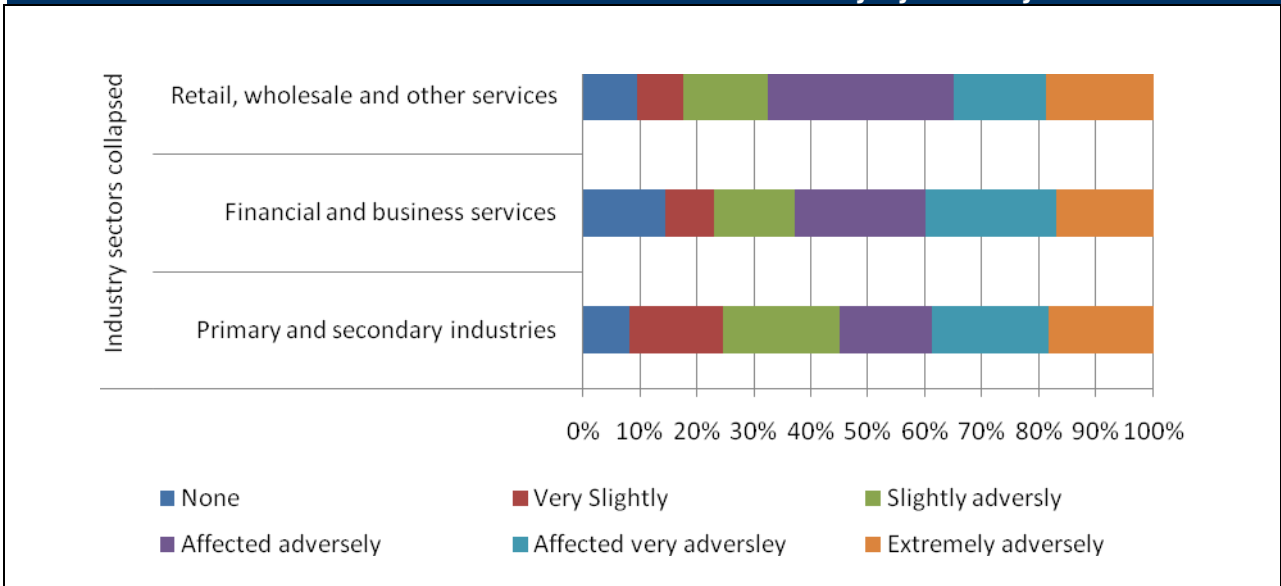
Source: BMI-T, 2009

**Figure 89**  
**Internet connection down effect on service delivery by district municipality**



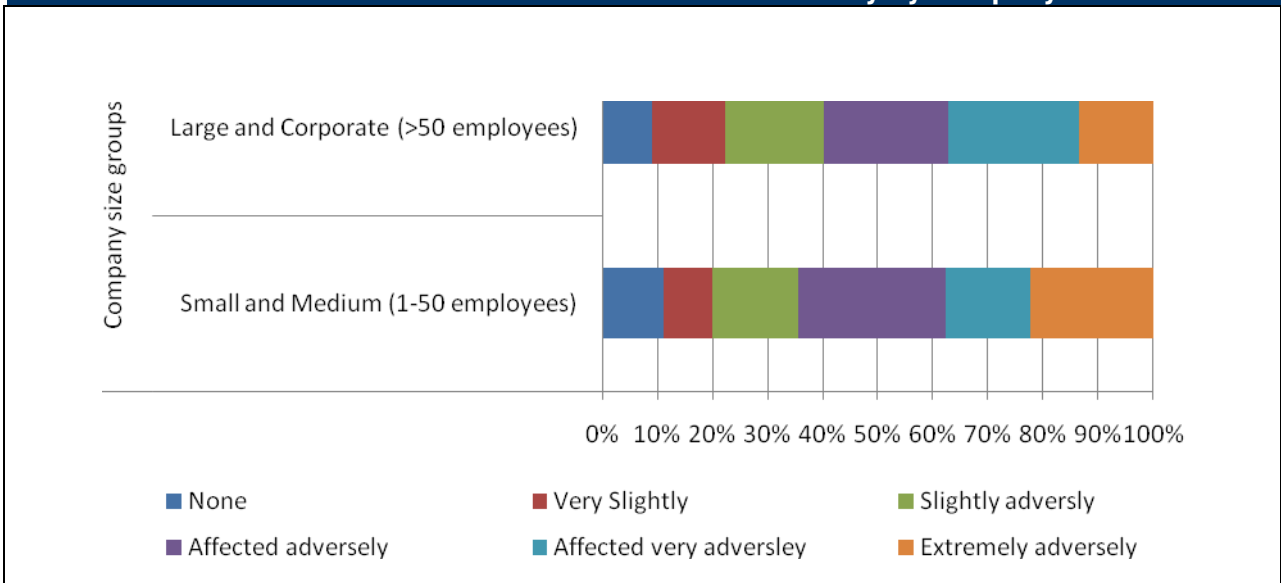
Source: BMI-T, 2009

**Figure 90**  
**Internet connection down effect on service delivery by industry sector**



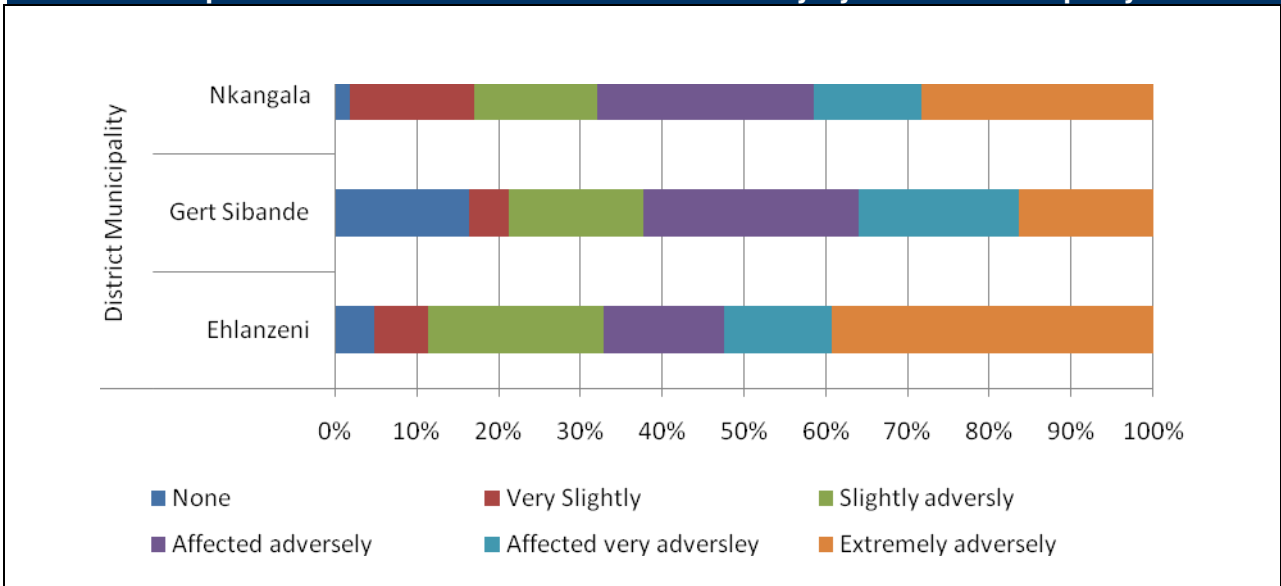
Source: BMI-T, 2009

**Figure 91**  
**Internet connection down effect on service delivery by company size**



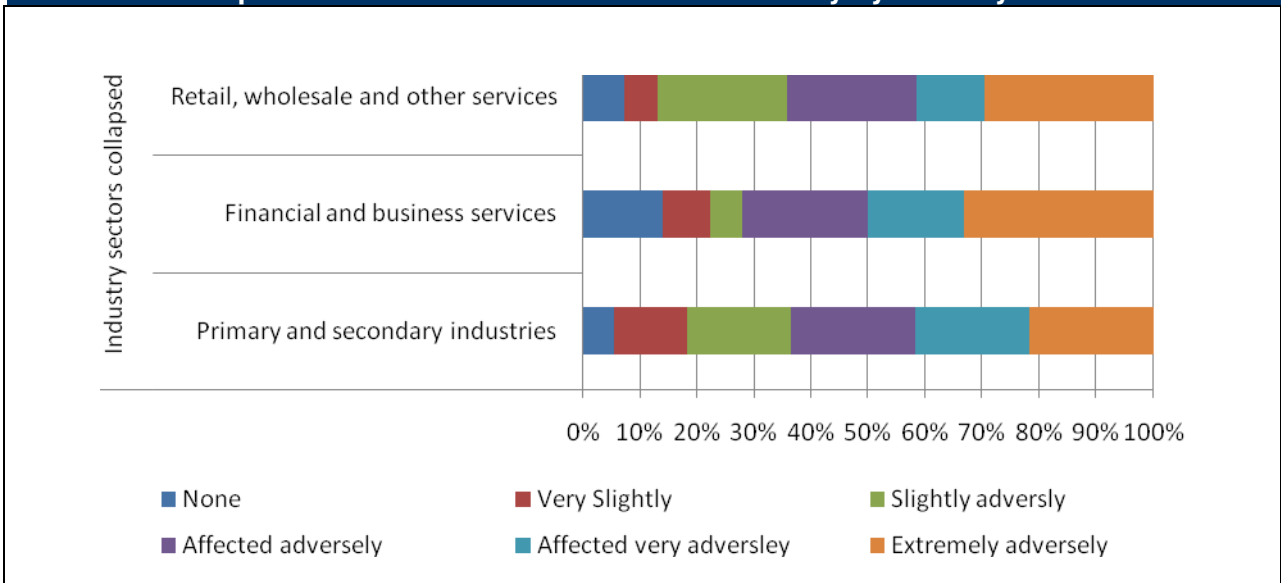
Source: BMI-T, 2009

**Figure 92**  
**Telephone lines down effect on service delivery by district municipality**



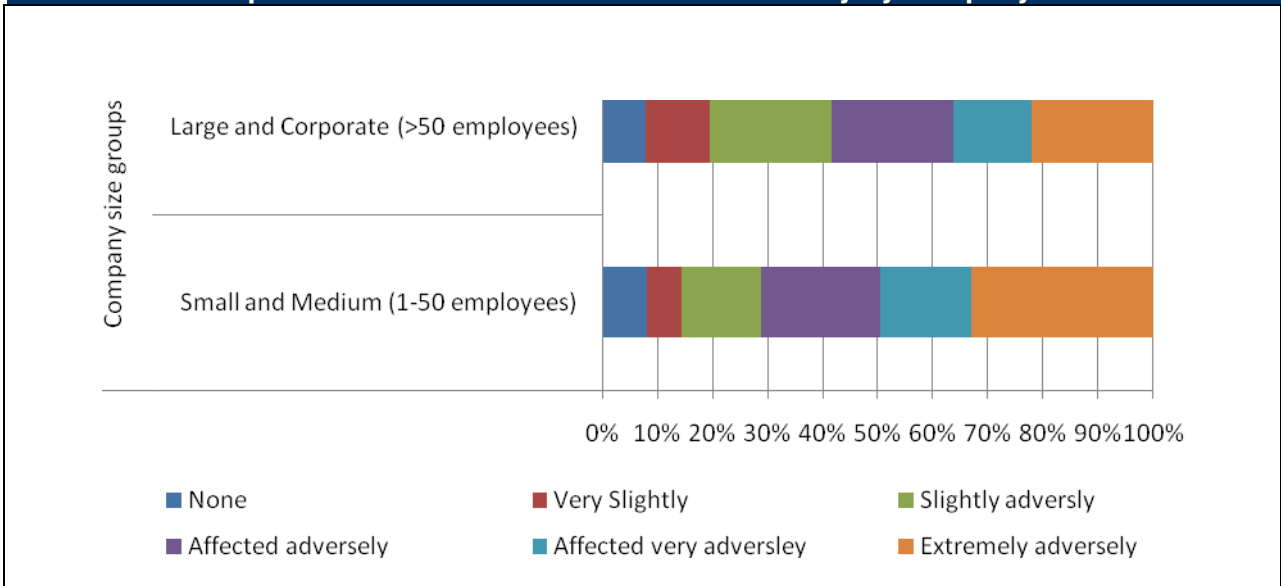
Source: BMI-T, 2009

**Figure 93**  
**Telephone lines down effect on service delivery by industry sector**



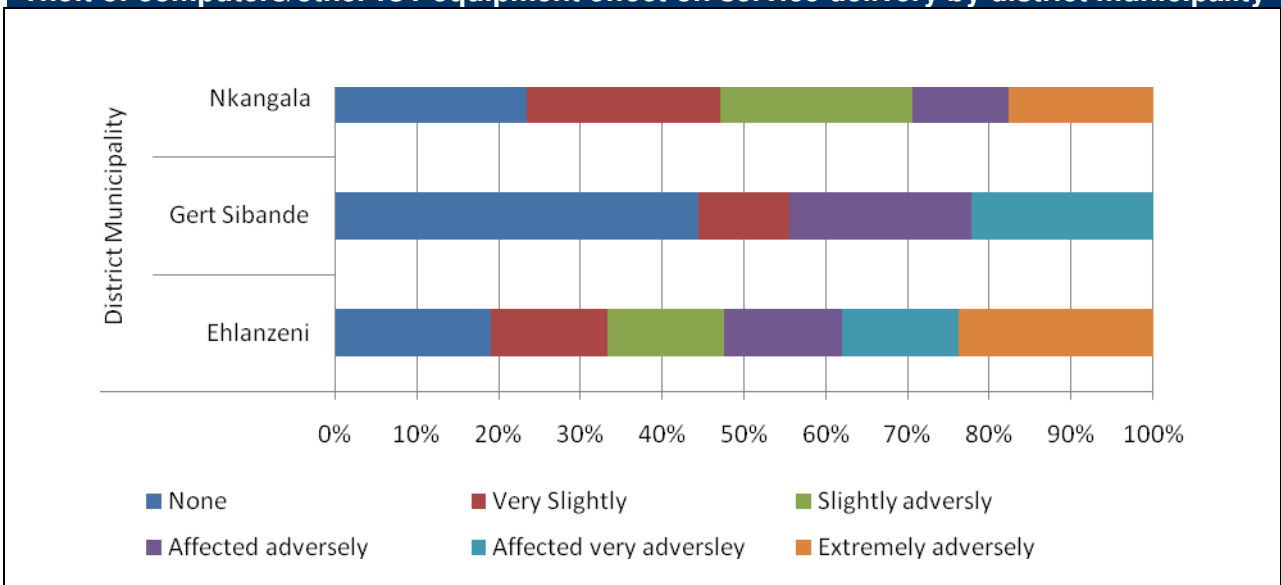
Source: BMI-T, 2009

**Figure 94**  
**Telephone lines down effect on service delivery by company size**



Source: BMI-T, 2009

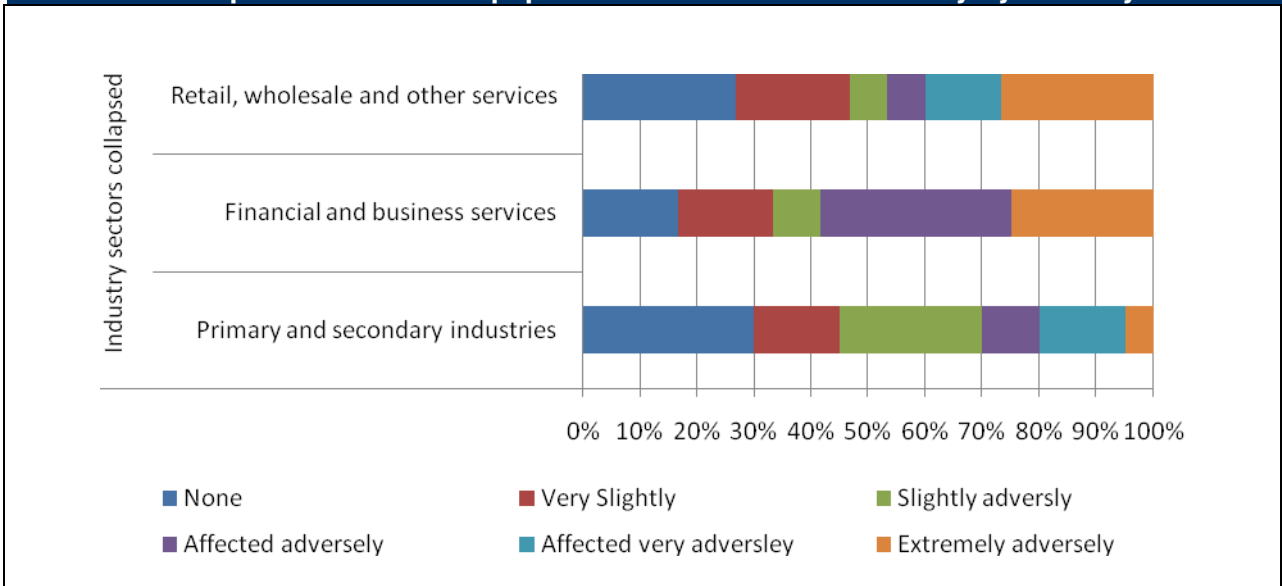
**Figure 95**  
**Theft of computers/other ICT equipment effect on service delivery by district municipality**



Source: BMI-T, 2009

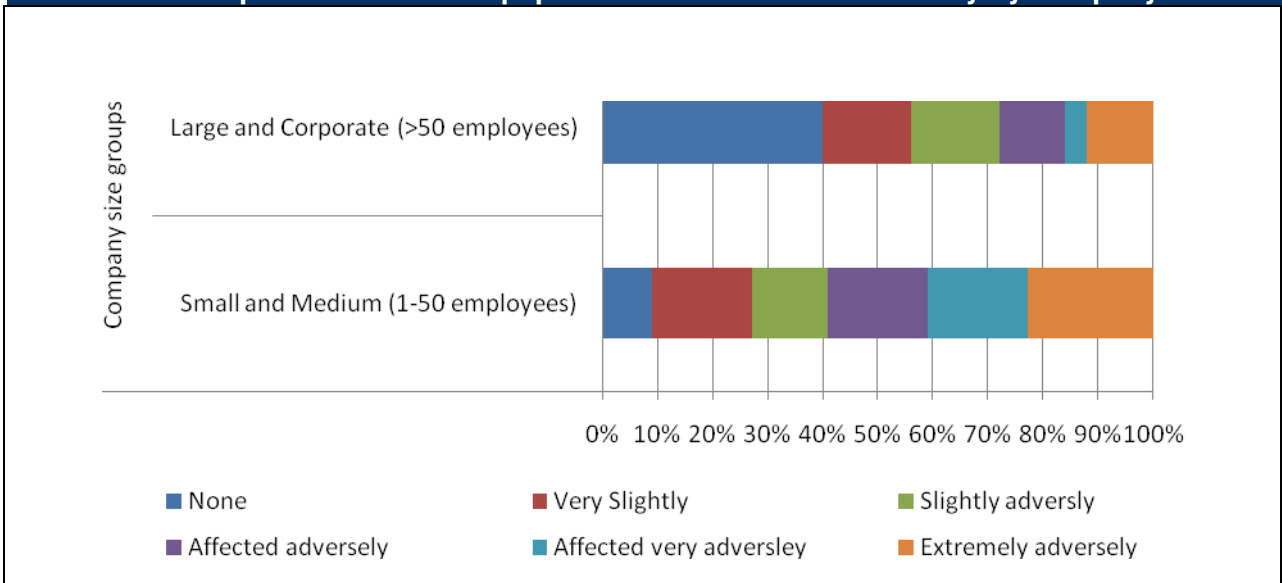


**Figure 96**  
**Theft of computers/other ICT equipment effect on service delivery by industry sector**



Source: BMI-T, 2009

**Figure 97**  
**Theft of computers/other ICT equipment effect on service delivery by company size**



Source: BMI-T, 2009

Generally Ehlanzeni was more strongly affected, as was the retail and wholesale trade sector and small and medium companies.

### **IT problems**

The major problems or issues that the business respondents experience with regard to IT are shown in the table below.

**Table 15**  
**Major problems/issues experienced with regard to IT**

<b>What are the major problems or issues that you experience with regard to IT?</b>	<b>N=372</b>
No problems	28.5%
Internet connection problems: lines down/slow, no network coverage	23.1%
Problems due to power outages	11.6%
Poor maintenance, service, after sales service, repairs from Eskom, local municipality, Telkom etc	9.1%
Other	8.6%
Theft	8.6%
Lack of in house technical skills	4.3%
Low productivity and high cost	3.5%
Viruses	2.7%

Source: BMI-T, 2009

Internet connection and power related problems are the main issues.

### ***Telecoms problems***

The major problems or issues that the business respondents experience with regard to Telecoms are shown in the table below.

**Table 16**  
**Major problems/issues experienced with regard to Telecoms**

<b>Q21 What are the major problems or issues that you experience with regard to Telecoms?</b>	<b>N=367</b>
Lines down/very slow/noisy (due to lightning, power outages, bad weather and theft)	45.8%
Poor Service, wait too long for repairs	31.1%
None	20.2%
Too expensive	3.0%

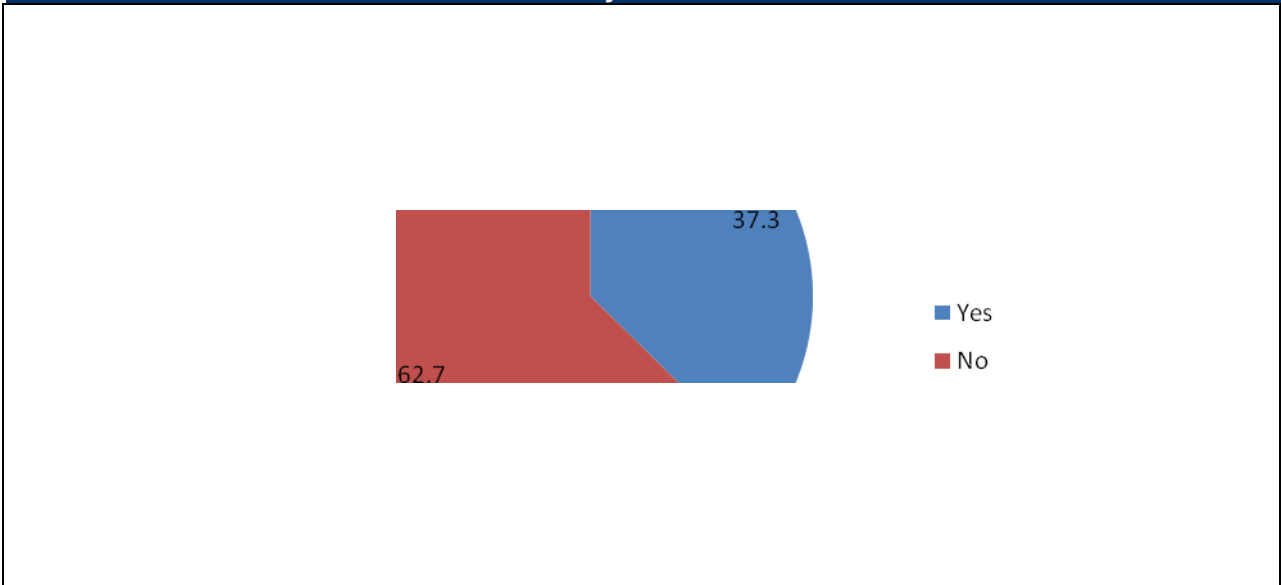
Source: BMI-T, 2009

For telecoms infrastructure and poor service are the main issues.

### ***ICT service/infrastructure problems experienced***

Respondents were asked if they had experienced ICT service or infrastructure problems in the last year. The results are shown below.

**Figure 98**  
**Have you experienced ICT service/infrastructure problems at your company in the last year?**

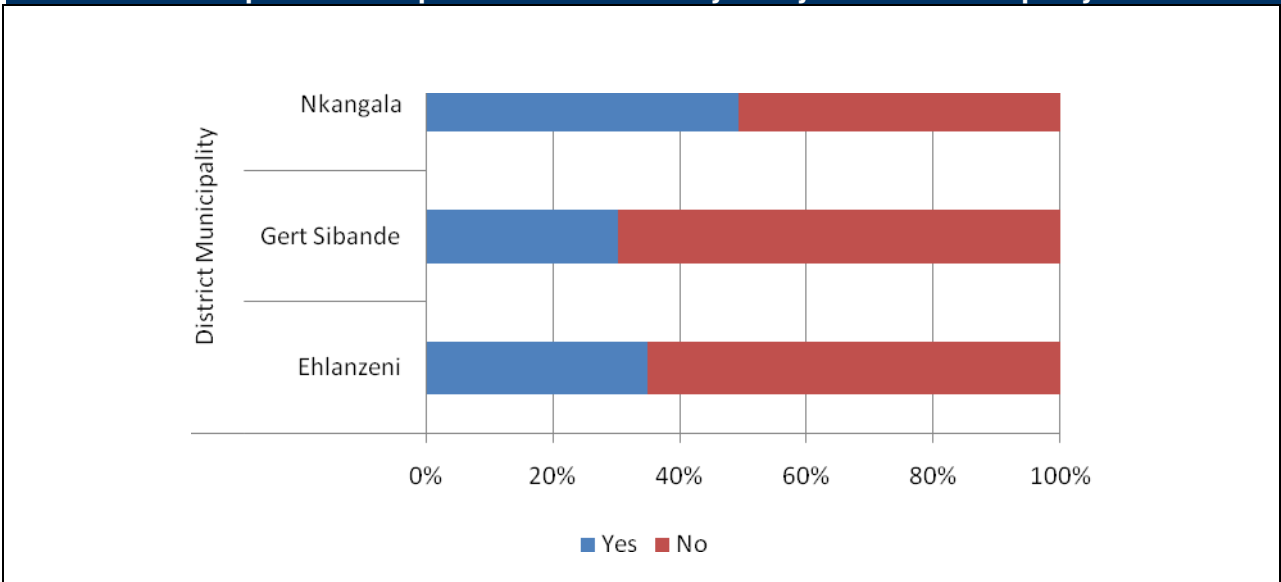


Source: BMI-T, 2009

*Segmentations of ICT problems experienced*

The figures below show segmentations for ICT problems experienced.

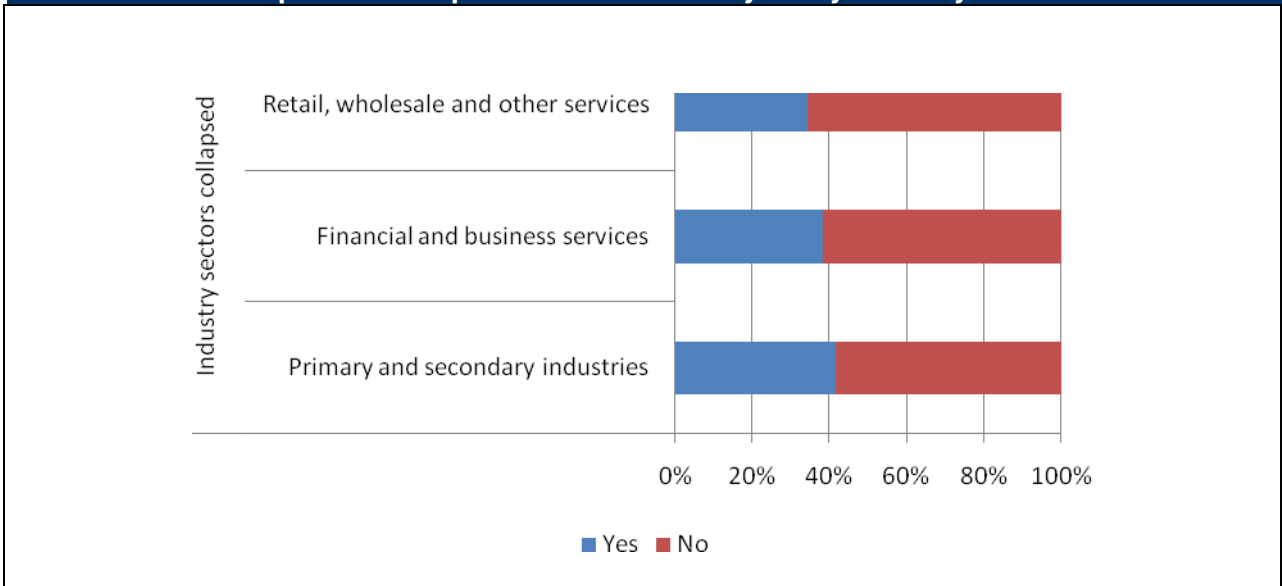
**Figure 99**  
**ICT problems experienced in the last year by district municipality**



Source: BMI-T, 2009

Nkangala experienced most problems.

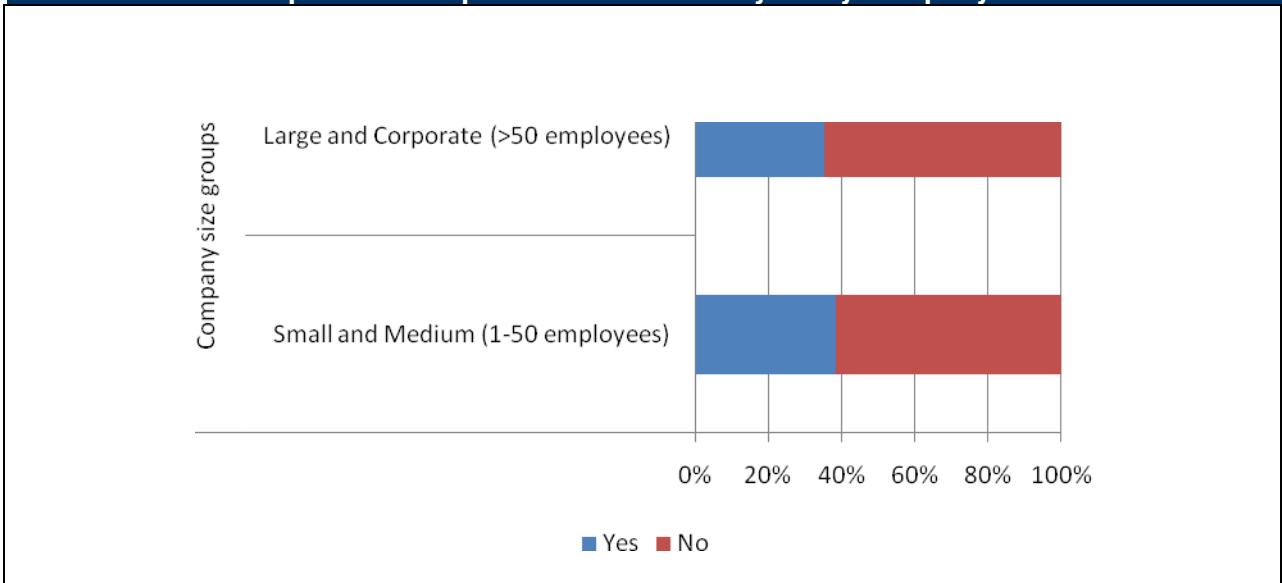
**Figure 100**  
**ICT problems experienced in the last year by industry sector**



Source: BMI-T, 2009

Primary and secondary industries experienced most problems.

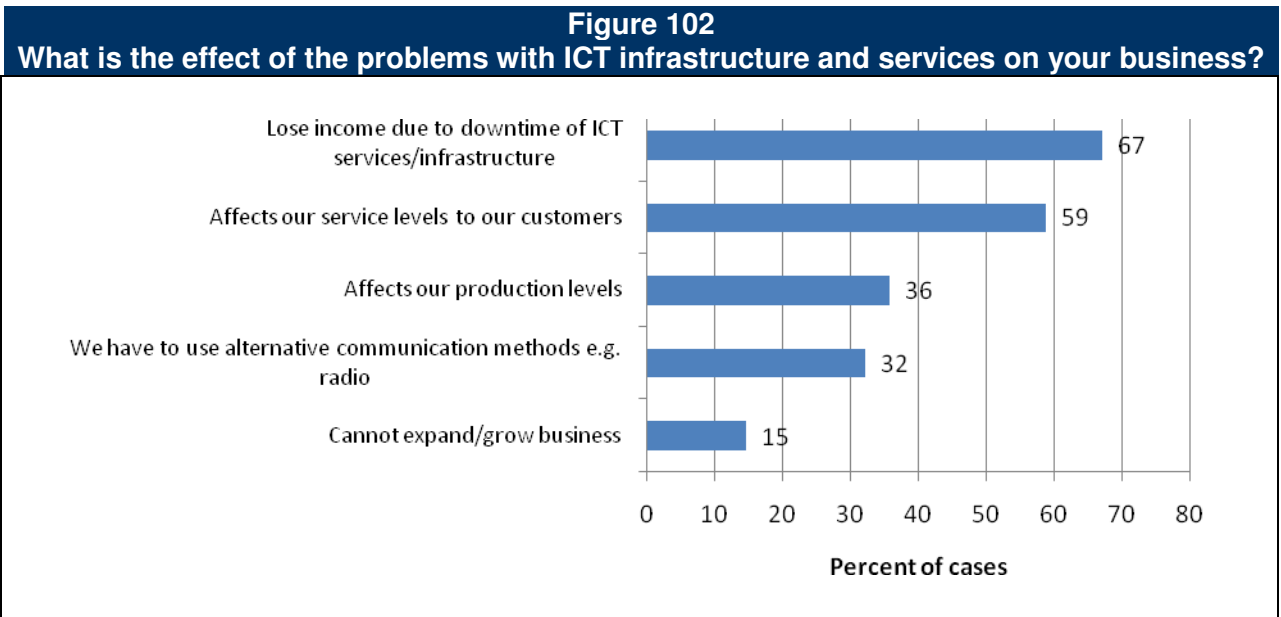
**Figure 101**  
**ICT problems experienced in the last year by company size**



Source: BMI-T, 2009

The above figure shows similar effect for company sizes.

**Effect of ICT problems on business**

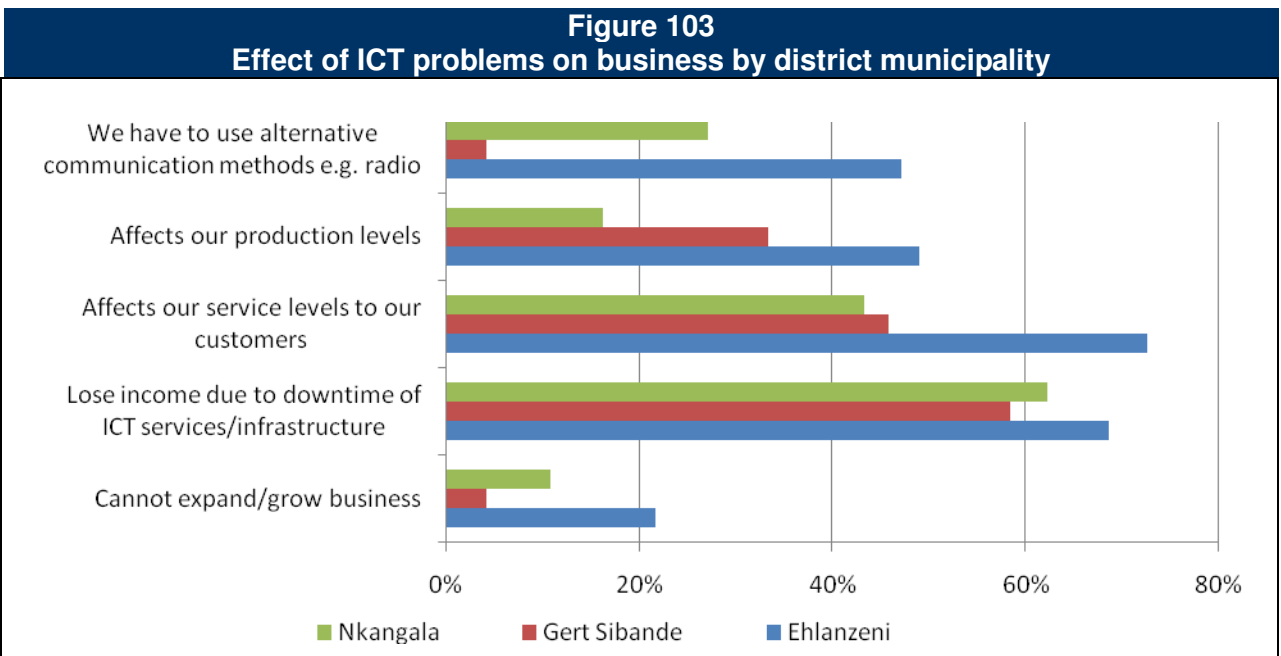


Source: BMI-T, 2009

The biggest effect of ICT infrastructure and services problems are loss of income (67%) and service levels to customers affected (59%).

*Segmentations of effect of ICT problems on business*

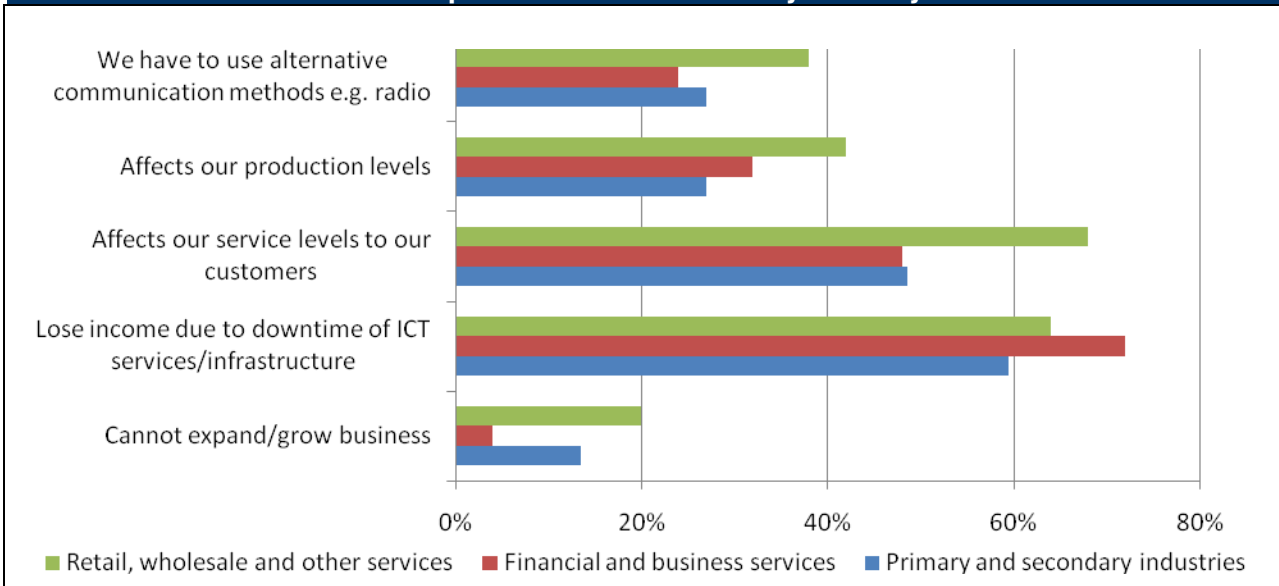
The figures below show the segmentations.



Source: BMI-T, 2009

Ehlanzeni has higher effects for all problems mentioned.

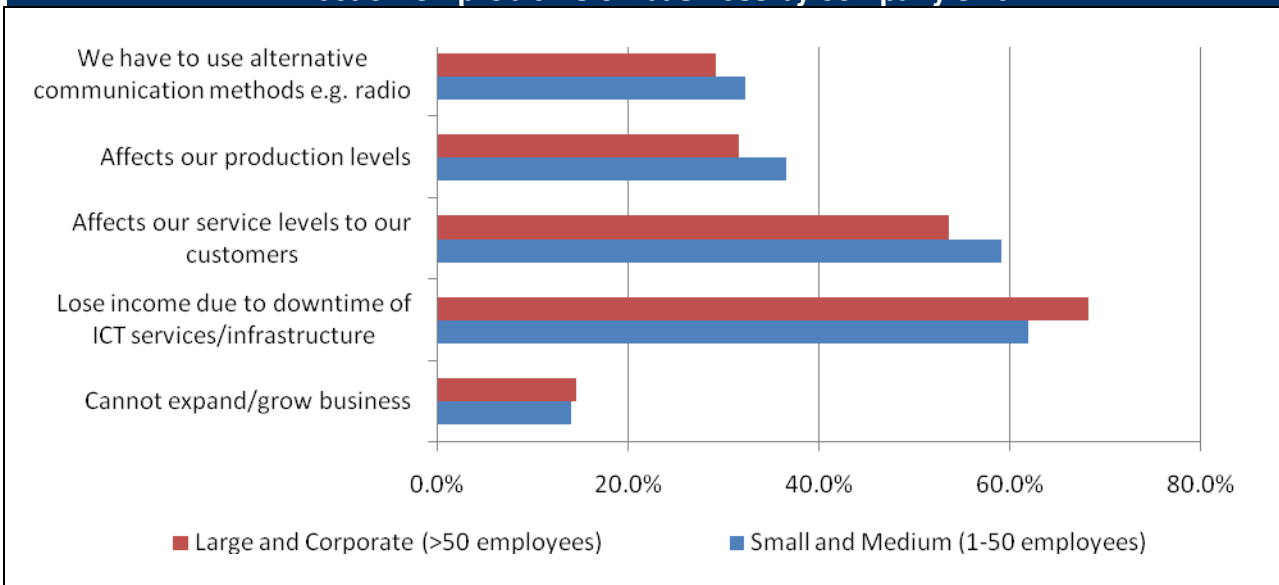
**Figure 104**  
**Effect of ICT problems on business by industry sector**



Source: BMI-T, 2009

Financial and business services have highest income losses, retail and wholesale services had highest effect for other problems experienced.

**Figure 105**  
**Effect of ICT problems on business by company size**



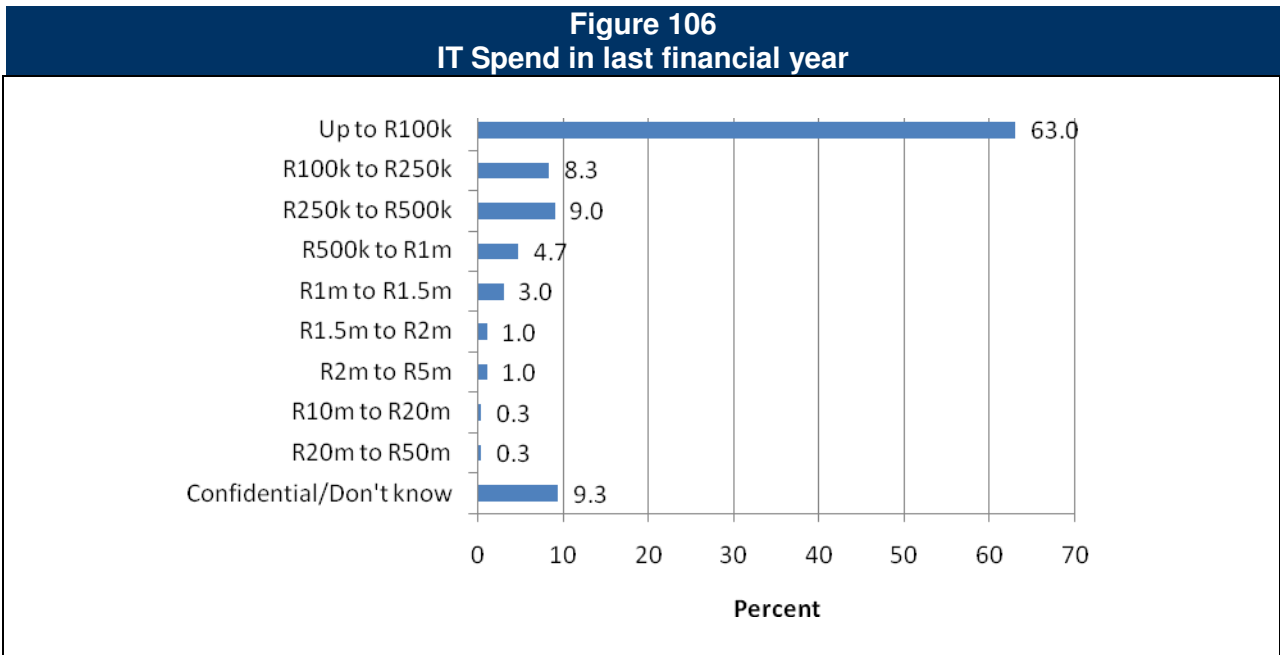
Source: BMI-T, 2009

Effects experienced are quite similar.

## IT and Telecoms growth and spend

This section covers the amount spent on IT and Telecoms in the last financial year by the respondents as well as their budgets for the current year and the factors that are likely to accelerate or delay IT and Telecoms spend.

**IT spend**

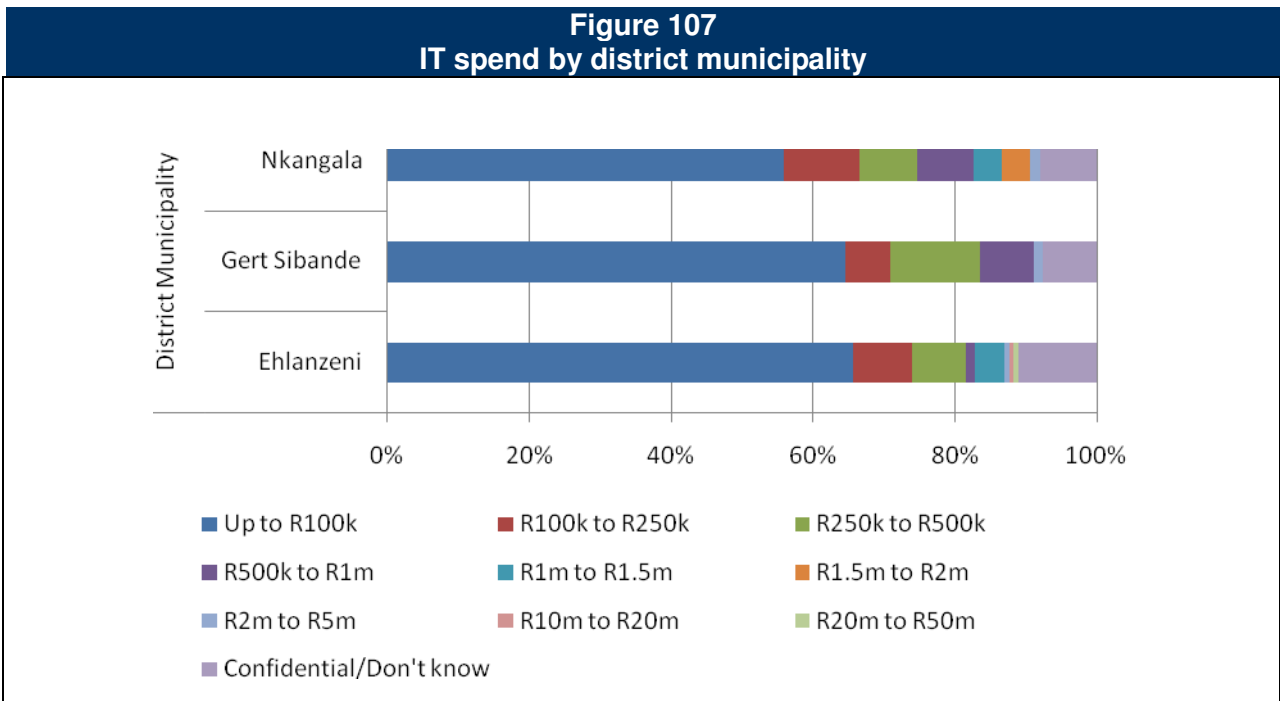


Source: BMI-T, 2009

Almost two thirds spend less than R100 000 per annum on IT.

*Segmentations of IT spend*

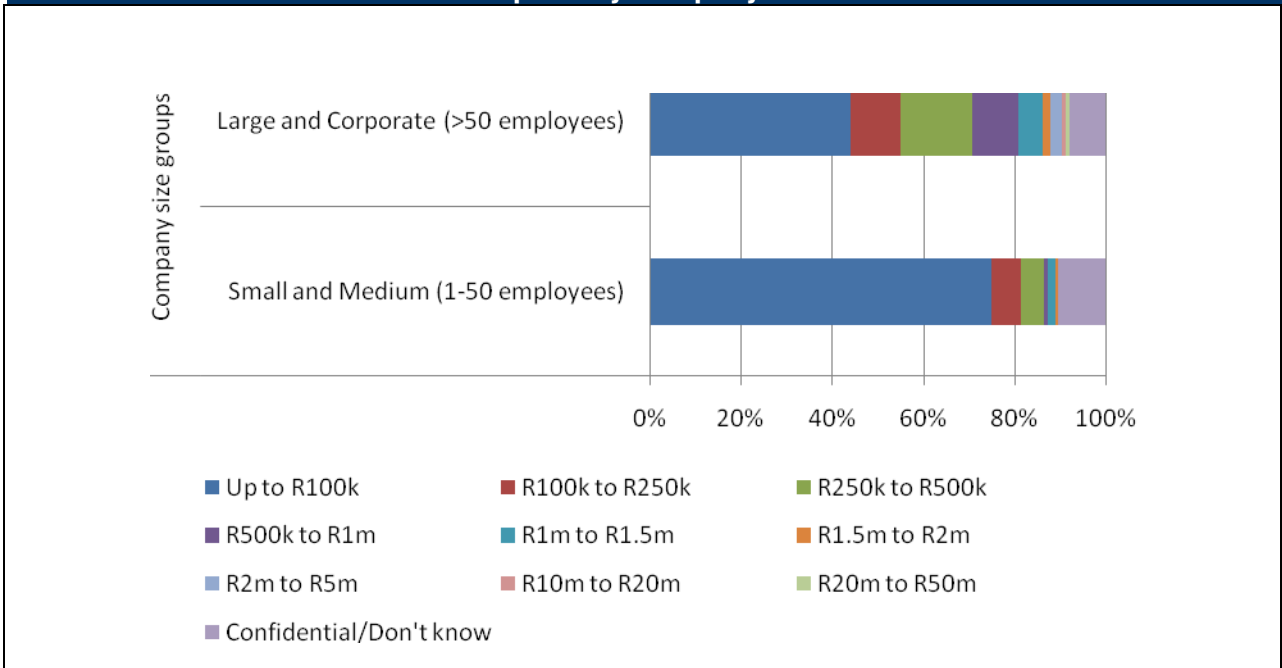
Segmentation figures are shown below.



Source: BMI-T, 2009

Nkangala spends more on IT.

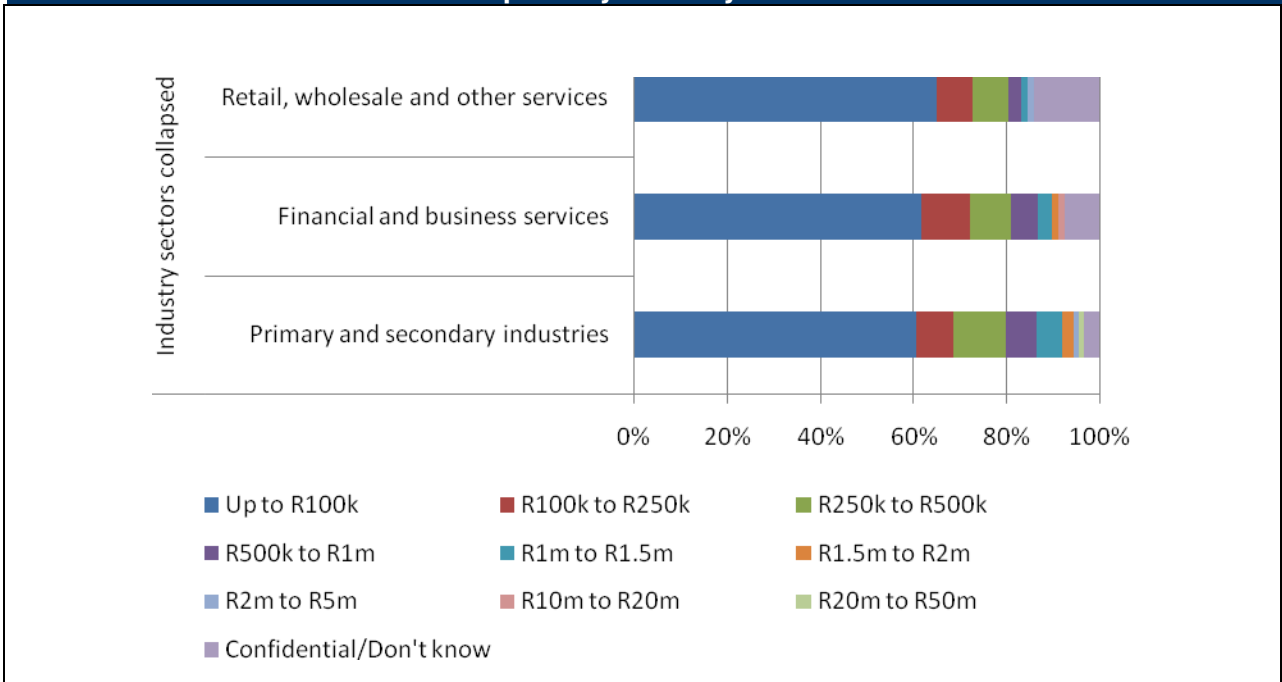
**Figure 108**  
IT spend by company size



Source: BMI-T, 2009

SMMEs spend less on IT.

**Figure 109**  
IT spend by industry sector



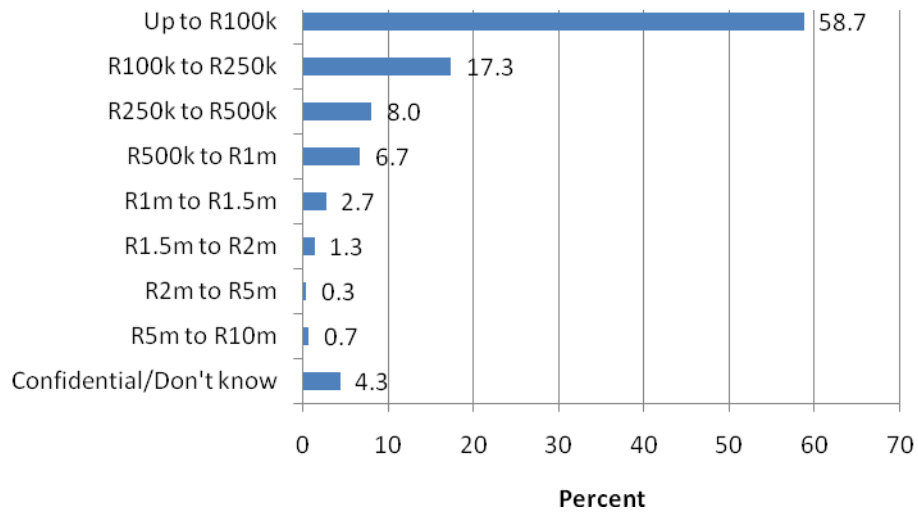
Source: BMI-T, 2009

Primary and secondary industries spend marginally more on IT.



## Telecoms spend

**Figure 110**  
**Telecoms spend in last financial year**



Source: BMI-T, 2009

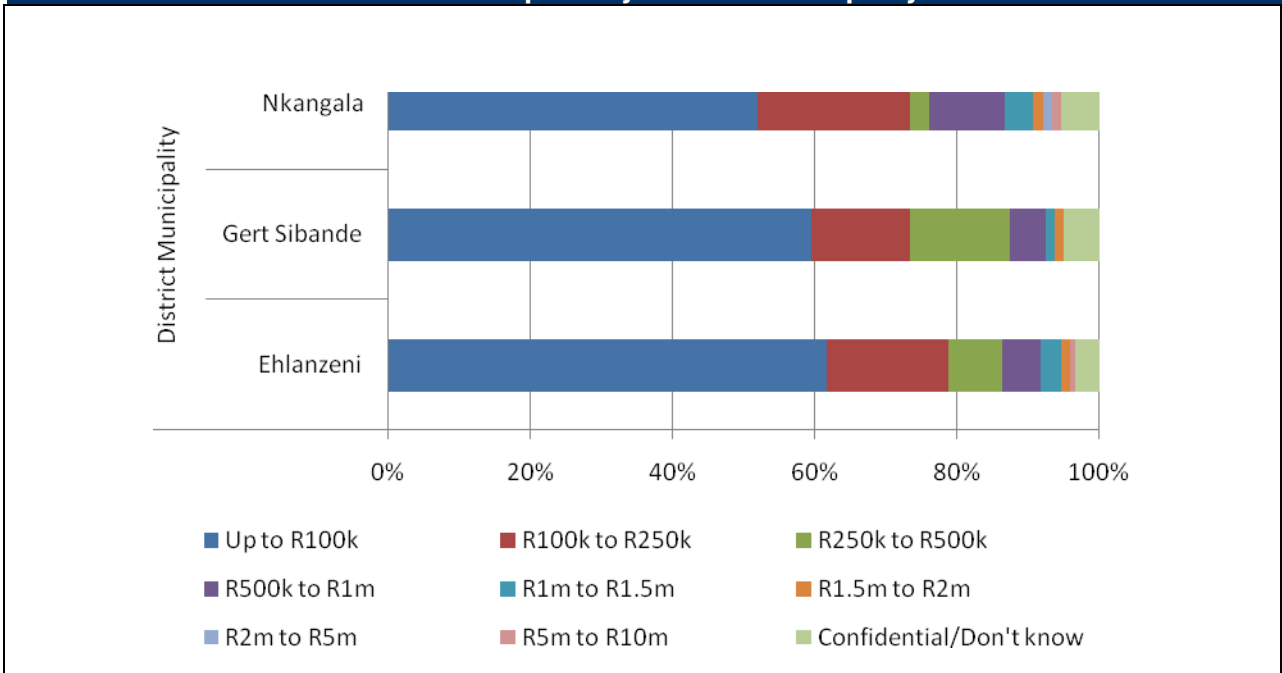
Almost 59% of respondents spend less than R100 000 per annum on telecoms. 32% spend between R100 000 and R1 million.

The vast majority of respondents expect their IT and Telecoms spend to increase in the next financial year. A few of the respondents expect their spend to stay the same.

### *Telecoms spend segmentations*

Segmentations of telecoms spend are shown below.

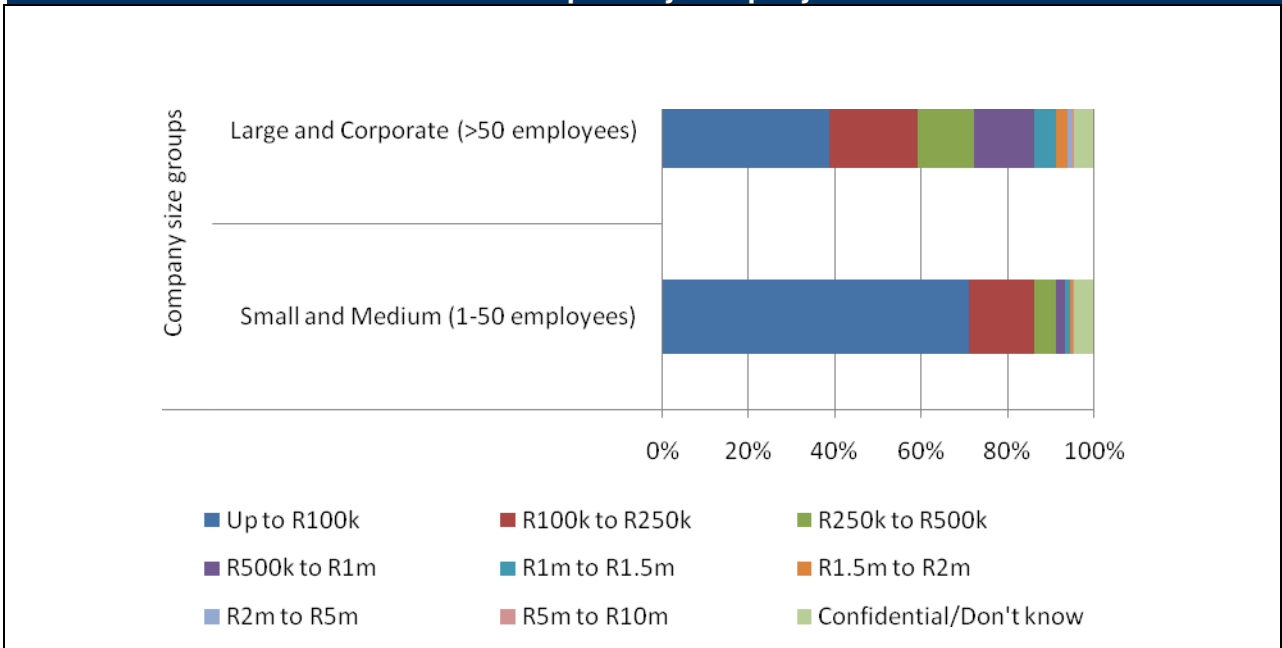
**Figure 111**  
Telecoms spend by district municipality



Source: BMI-T, 2009

Nkangala spend is marginally higher.

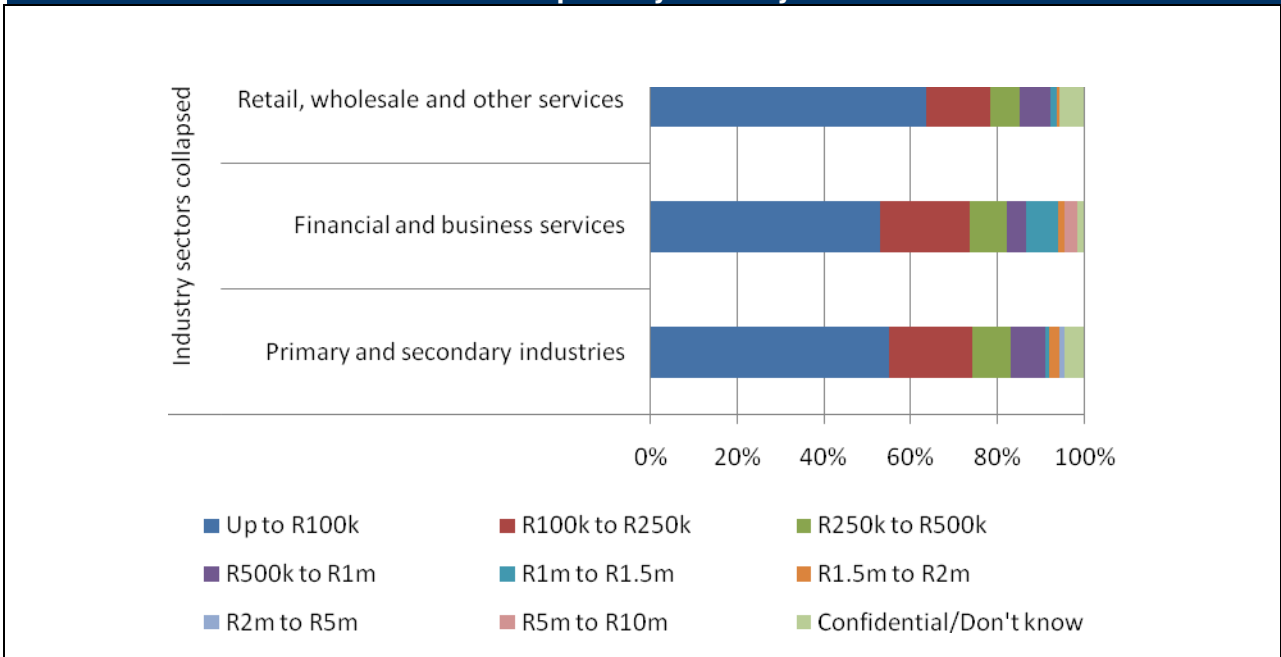
**Figure 112**  
Telecoms spend by company size



Source: BMI-T, 2009

Large and corporate companies spend a lot more than SMMEs on telecoms.

**Figure 113**  
**Telecoms spend by industry sector**



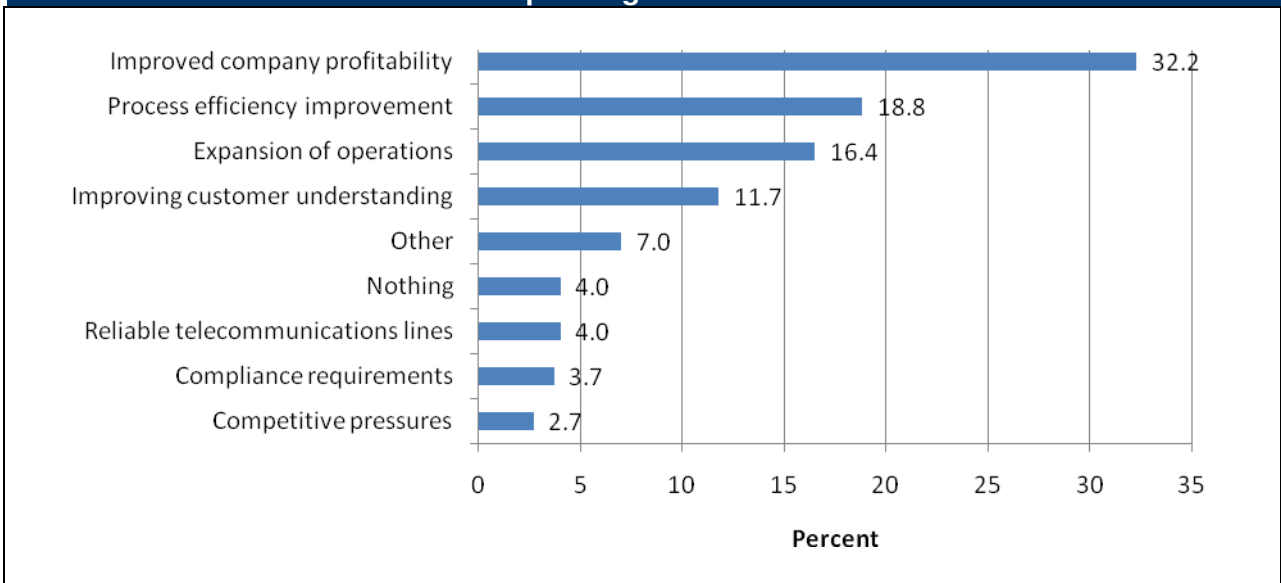
Source: BMI-T, 2009

Financial and business services spend more on telecoms.

**Factors accelerating and delaying IT and Telecoms spend**

The availability of money is the major determinant of the amount of IT and Telecoms spend.

**Figure 114**  
**What one factor will be the most likely to accelerate IT and Telecoms projects and related spending for 2009?**



Source: BMI-T, 2009

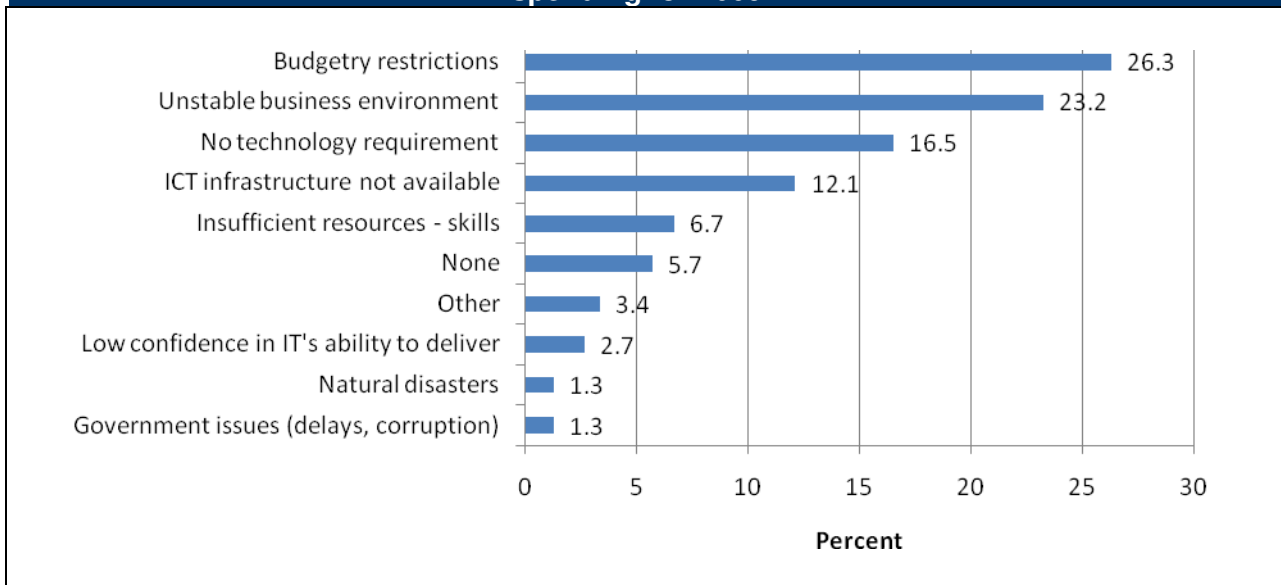
**Table 17**  
**Top four accelerating factors by district municipality**

	District Municipality		
	Ehlanzeni	Gert Sibande	Nkangala
Improved company profitability	29.9%	36.7%	32.0%
Process efficiency improvement	22.2%	15.2%	16.0%
Expansion of operations	18.8%	17.7%	10.7%
Improving customer understanding	9.0%	13.9%	14.7%

Source: BMI-T, 2009

The table above shows segmentations by district where profitability is the biggest issue for Gert Sibande and Ehlanzeni shows the highest sophistication by indicating 22% for process efficiency improvement.

**Figure 115**  
**What one factor will be the most likely to delay IT and Telecoms projects and related spending for 2009?**



Source: BMI-T, 2009

The 17% of respondents indicating no technology requirement shows a lack of understanding of the benefits and cost savings of ICT if used efficiently.

**Table 18**  
**Top five delaying factors by district municipality**

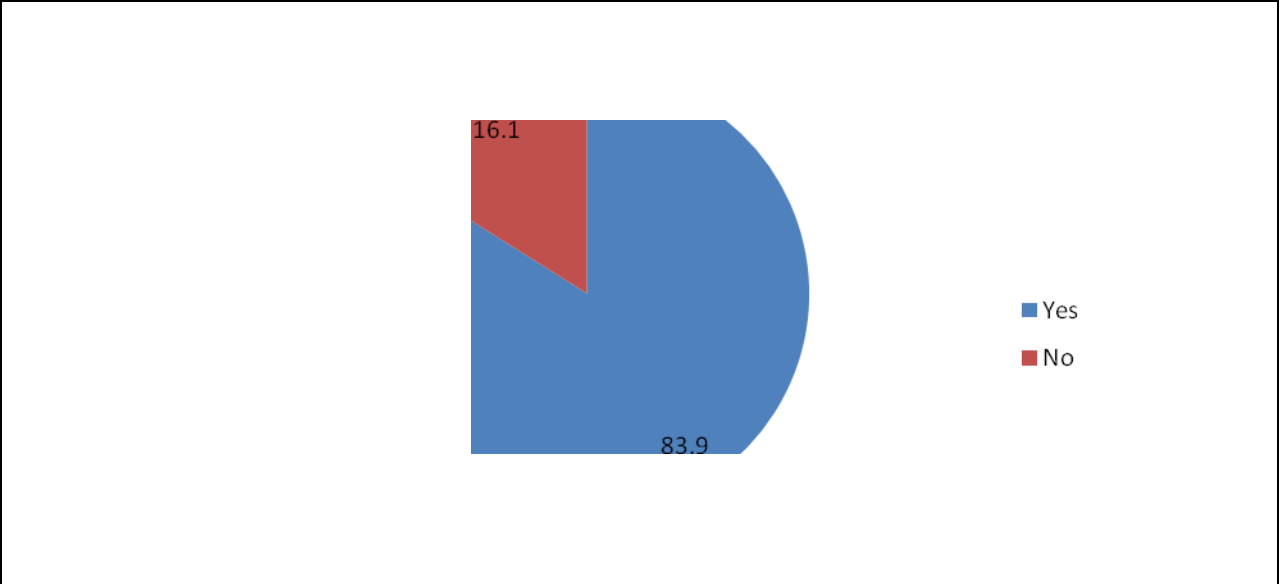
	District Municipality		
	Ehlanzeni	Gert Sibande	Nkangala
Unstable business environment	21.7%	24.1%	25.3%
Insufficient resources - skills	4.9%	11.4%	5.3%
Budgetary restrictions	24.5%	19.0%	37.3%
No technology requirement	17.5%	16.5%	14.7%
ICT infrastructure not available	14.0%	16.5%	4.0%

Source: BMI-T, 2009

Nkangala indicates budgetary restrictions as higher than other 2 districts and for Gert Sibande unstable business environment is the top delaying factor, not budgets.

**Financial impacts of inoperability**

**Figure 116**  
**Are you aware of the financial impacts your company would face should your company be inoperable for more than a day for any reason?**

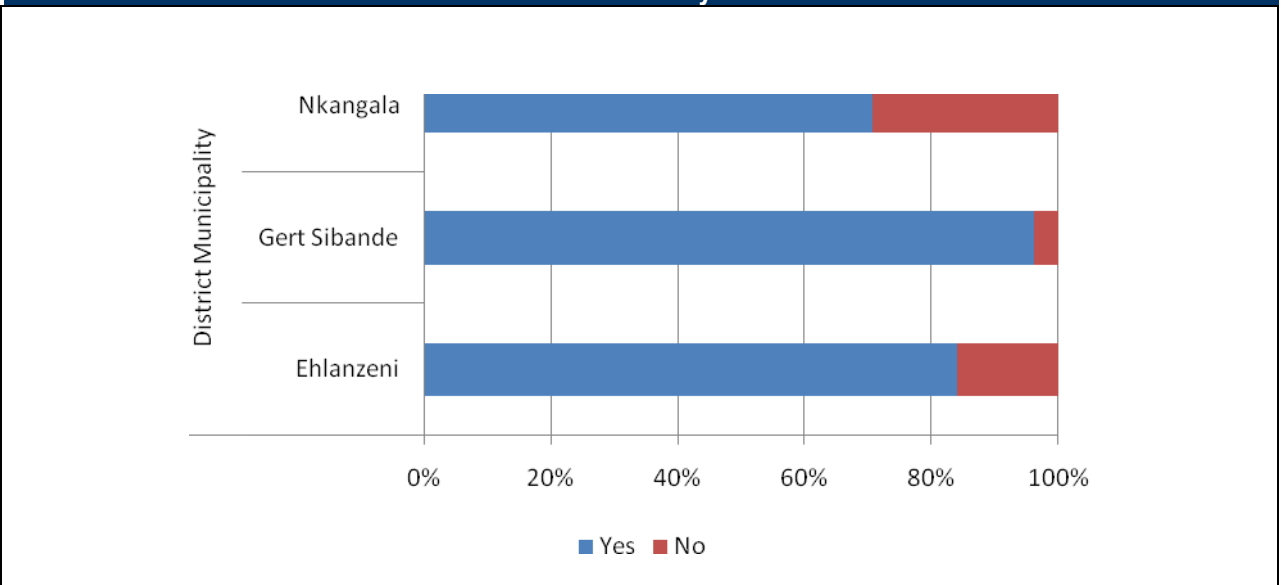


Source: BMI-T, 2009

The vast majority of respondents (84%) are aware of the financial implications of being inoperable for more than a day.

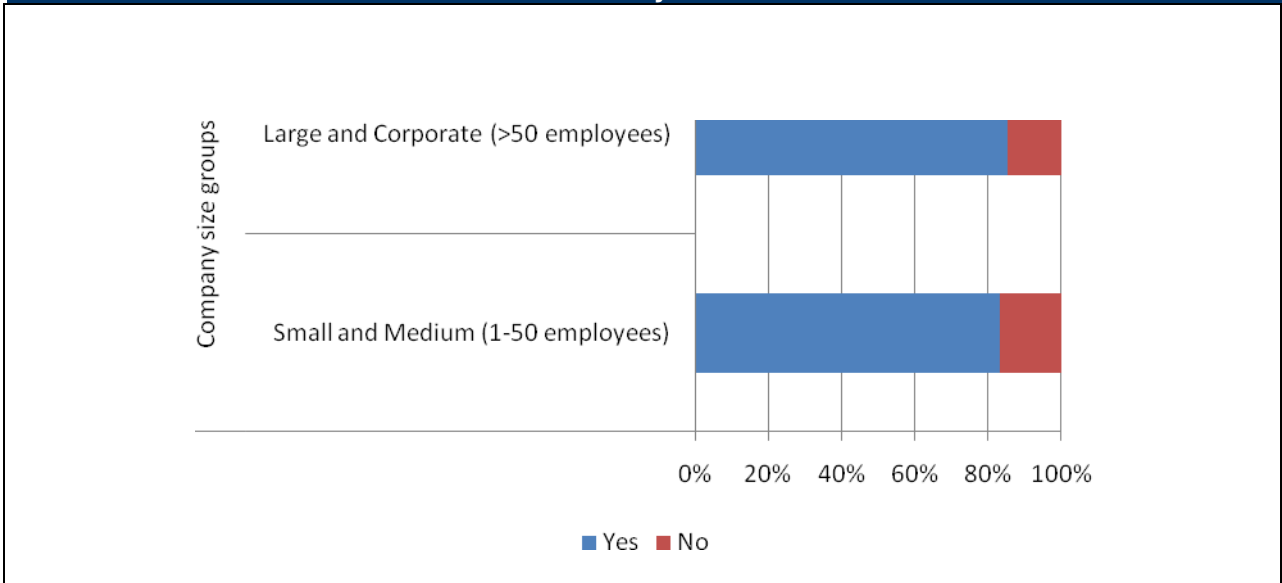
Segmentations are shown in the figures below.

**Figure 117**  
**District municipality by awareness of financial implications of being inoperable for more than a day**



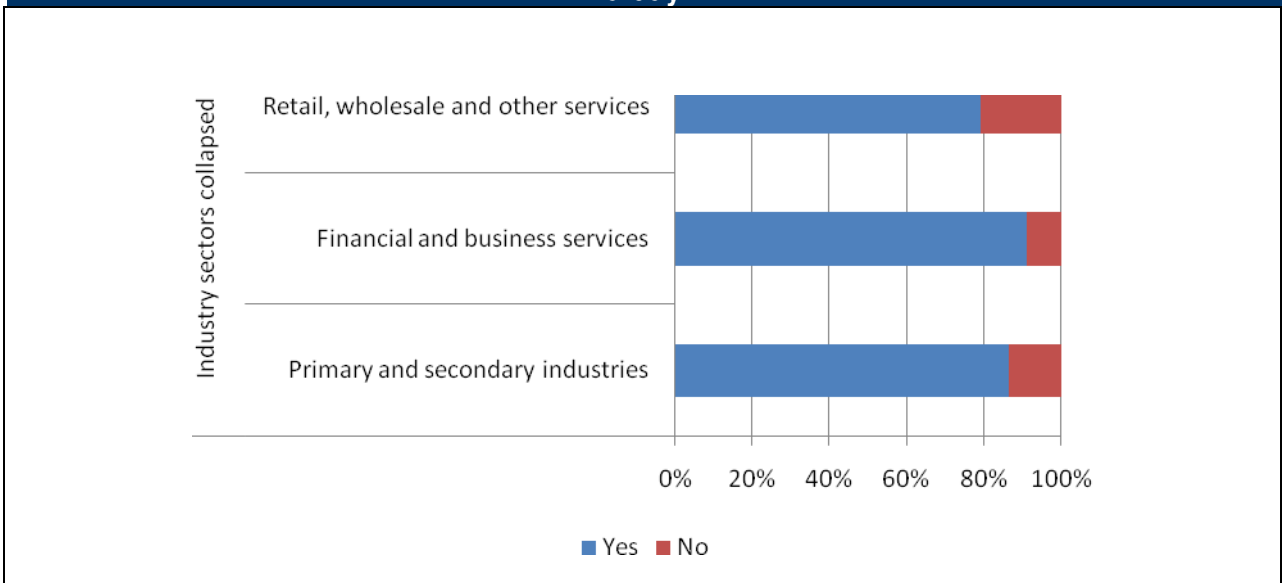
Source: BMI-T, 2009

**Figure 118**  
**Company size by awareness of financial implications of being inoperable for more than a day**



Source: BMI-T, 2009

**Figure 119**  
**Industry sectors by awareness of financial implications of being inoperable for more than a day**

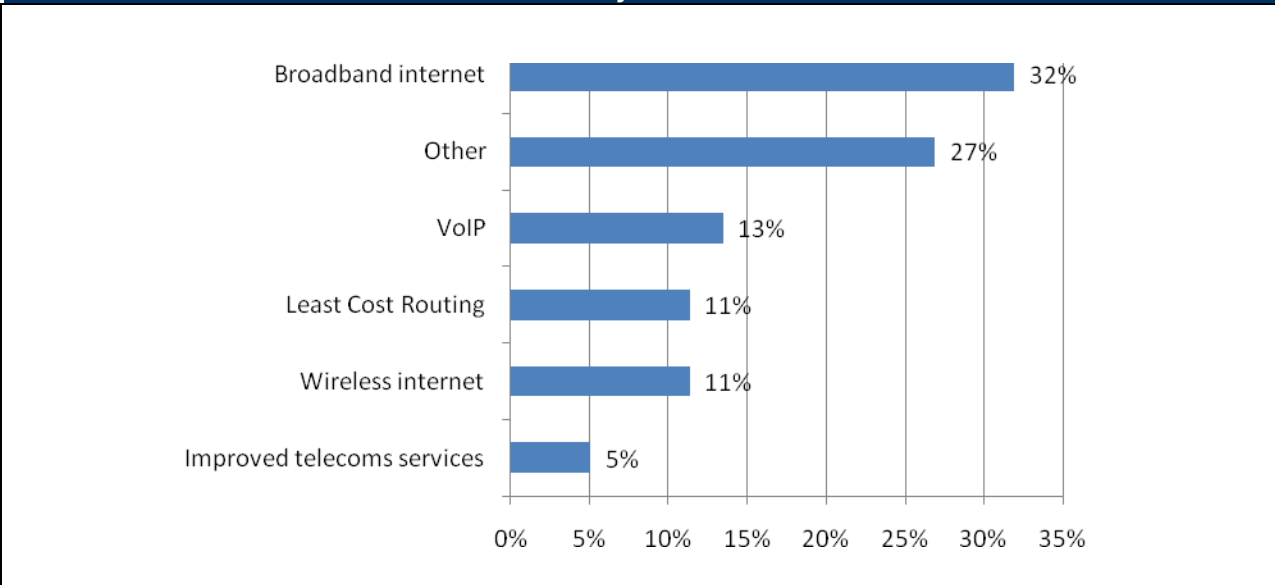


Source: BMI-T, 2009

## IT and Telecoms Wish List

Respondents were asked what would be on their IT and Telecoms wish list. The results are shown below.

**Figure 120**  
**If you could have any IT and Telecoms services that you do not currently have, which would you want?**



Source: BMI-T, 2009

Broadband internet and Voice over IP are the top two. This again shows a generally low level of sophistication that ADSL and VoIP are the top of the wish list, implying the respondents do not have them.

'Other' includes a number of diverse responses not shown in the figure including: Skype, payroll system, satellite, teleconferencing, VPN, WAN, LAN, Wi-Fi hotspots, internet ordering website, point of sale, internet access, GPS, electronic tills, 3G data cards.

The main reasons provided for wanting broadband internet are: faster internet connection, affordability, improve efficiency, more stable internet connection.

The main reasons for wanting Voice over IP are: lower costs, communication with other branches.

The main reasons for wanting LCR are: cost savings

The main reasons for wanting wireless internet are: convenience, ease of use, improved productivity, uncapped internet.

The main reasons for wanting improved telecoms services are: cheaper, improved productivity, faster repairs

**ICT services promised and ICT services being invested in**

Respondents were also asked which IT or Telecoms services they were promised by government or parastatals that has not materialised.

<b>Table 19</b> <b>ICT services promised by government/parastatals that have not materialised</b>	
<b>What IT or Telecoms services have you been promised by government or parastatals that has not materialised?</b>	<b>N=246</b>
None	92.3%
Second Fixed line/service provider, Telkom competition, Neotel	7.7%

Source: BMI-T, 2009

They were also asked which IT or Telecoms services would help them to generate more revenue.

<b>Table 20</b>	
<b>ICT services that would help to generate more revenue</b>	
<b>Which IT or Telecoms services would help you to generate more revenue?</b>	<b>N=180</b>
Nothing	45.0%
Broadband	15.6%
Generally better Telkom/connection/network/services etc	13.9%
Internet, 24/7 connectivity	10.6%
Reliability and Stability	9.4%
3G/ADSL	5.6%

Source: BMI-T, 2009

Broadband is mentioned again as well as improved ICT services and infrastructure.

The IT or Telecoms services that the respondents are investing in next year are shown below.

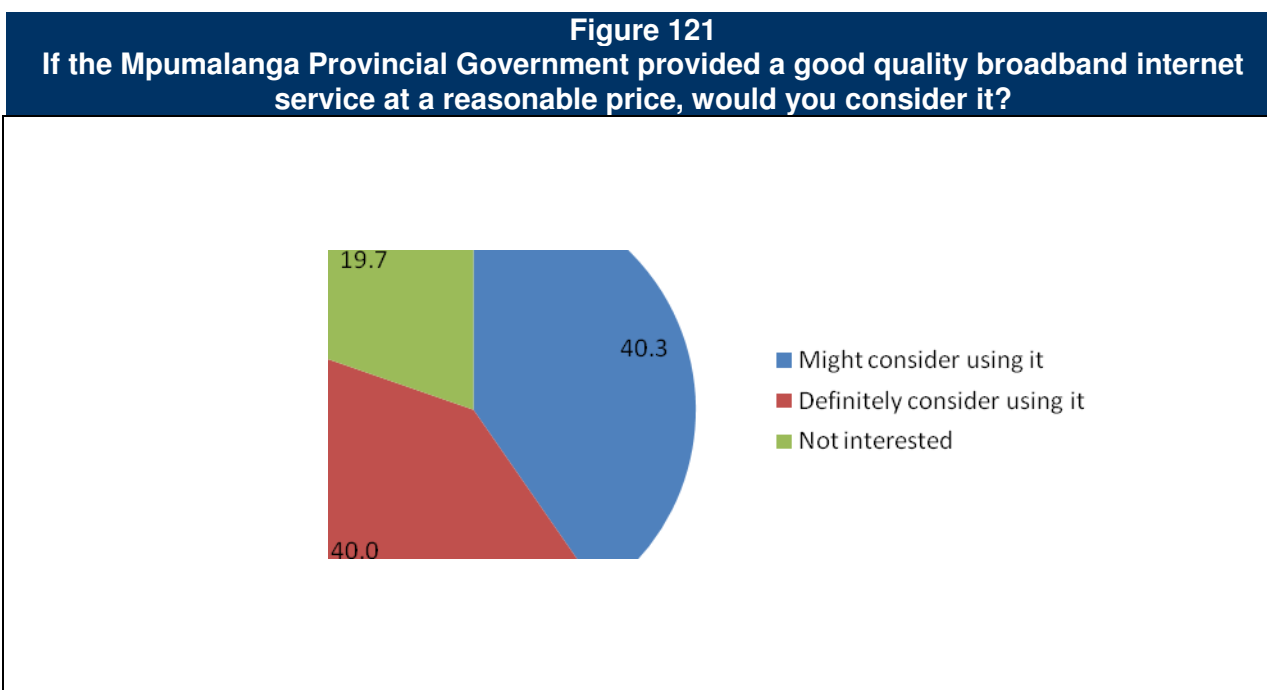
<b>Table 21</b>	
<b>ICT services planning to invest in</b>	
<b>What IT or Telecoms services will you be investing in the next year?</b>	<b>N=216</b>
Nothing	60.2%
General upgrading	14.8%
Broadband	6.9%
Wireless internet & VoIP	6.9%
New equipment: computers fax machines, hardware, phone systems, server, software etc	6.5%
Don't know	4.6%

Source: BMI-T, 2009

The fact that 60% are not investing in any ICT services shows again that funds, infrastructure and ICT knowledge are a problem in the province. General upgrading, broadband and wireless internet and VoIP are the top responses.



## Mpumalanga Provincial Government broadband network



Source: BMI-T, 2009

The figure above shows that over 80% of respondents would consider using a broadband network supplied by the Mpumalanga Provincial Government if it were of a good quality and at a reasonable price.

**Table 22**  
**Grouped comments regarding Mpumalanga broadband internet**

Please comment on your answer above.		N=428
Affordability/better pricing		27.8%
No need to change/happy as is		13.8%
Will have to wait and see/depends if it materializes/not sure if we'll need it		9.1%
Service, reliability, efficiency		35%
Conditional yes (if it works, if it happens etc)		4%
Other		10.3%

Source: BMI-T, 2009

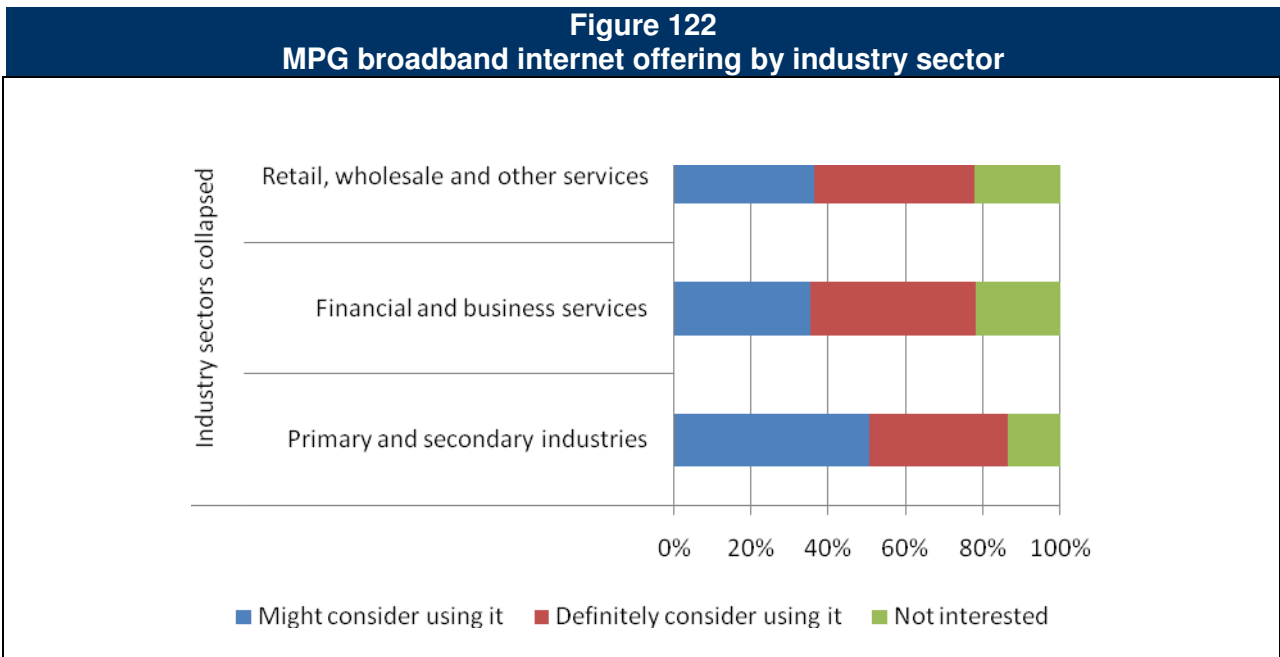
Respondents were asked to comment on their answers. The top verbatim comments of those who said they would definitely consider using it are: 'good for money to stay in Mpumalanga', 'price, service and quality must be good', 'maintenance must be outstanding', 'for cost cutting, 'for overall improved business', 'to improve productivity', 'improved communication', 'easier for local support and access', 'someone close to solve problems', ' We need this kind of service in our area urgently', ' If suppliers are linked', ' If reliable', ' Faster access to information especially if linked to outlying areas'.

Those who said they might consider using the broadband service gave the following comments: ' Depends if it materialises', ' Would first see if they kept their promises', ' If better service delivery', ' If cheaper', ' If service is good', ' If Government provided uninterrupted service', ' Not sure of its benefit', ' Must offer connectivity in rural areas', ' If better and compete with other players in the market', ' Need service to expand business', '

Service could only be better than Telkom', ' to save telecoms costs', ' If a safe company, better than Telkom - why not?', ' Will have to know more about it'.

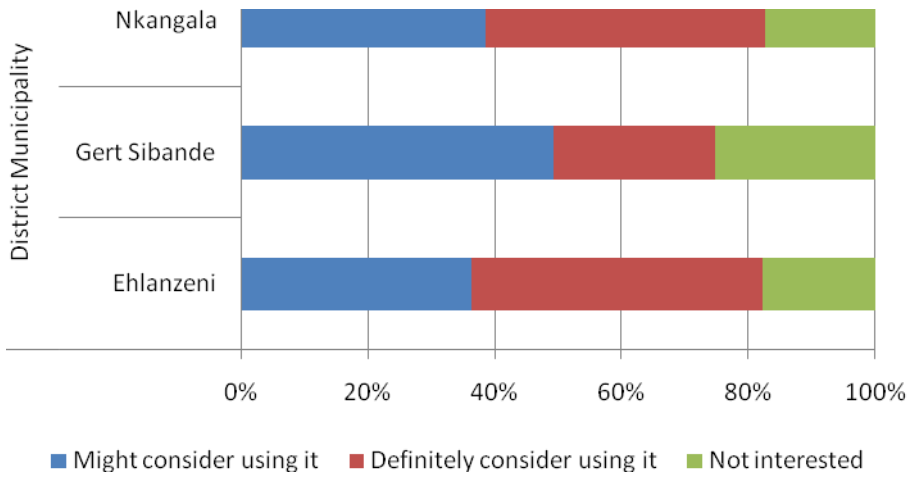
Those who said they were not interested, gave the following verbatim comments: ' Pleased with our current suppliers', ' Happy with 3G', ' Telkom managers will never change', ' HO not interested', ' Have managed with all the hassles we had', ' Have no confidence in maintenance, support', ' Happy with our provider of many years', ' Not willing to pay for a service from Government - it should be free', ' No confidence in them providing a stable system', ' No trust in their delivery of the service', ' Have to see if it will happen', ' Rather stick to what we know works 100%', ' Do not think government should get involved', ' No need at present', ' No faith in government', ' General service delivery from Government is poor', 'No need'.

Segmentations of interest in Mpumalanga broadband network are shown below.



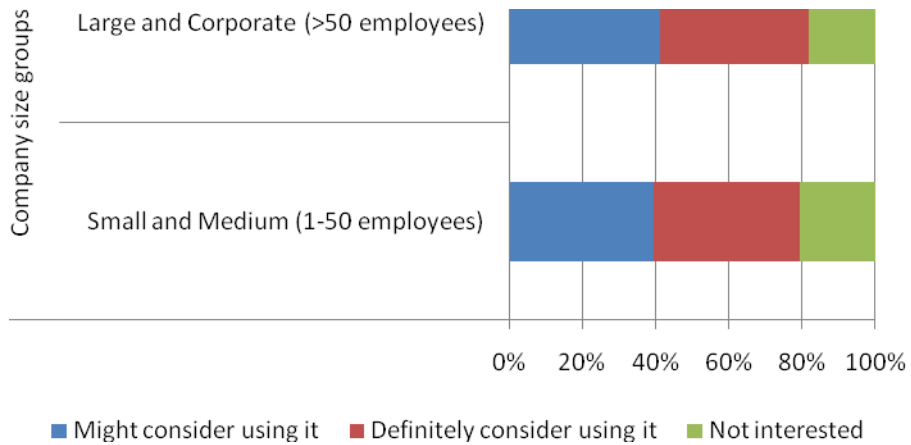
Source: BMI-T, 2009

**Figure 123**  
**MPG broadband internet offering by district municipality**



Source: BMI-T, 2009

**Figure 124**  
**MPG broadband internet offering by company size**

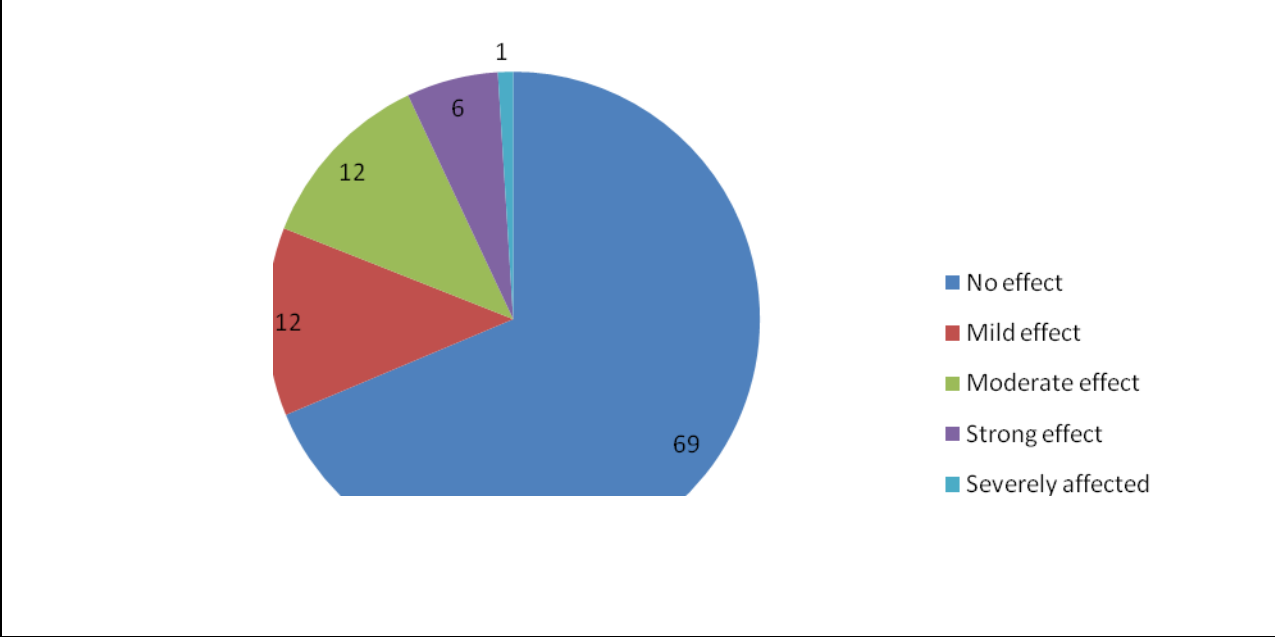


Source: BMI-T, 2009

## IT Skills

This section covers IT skills. Respondents were asked the following questions with regard to IT skills.

**Figure 125**  
**Please rate whether your company has been affected by IT skills shortages?**



Source: BMI-T, 2009

More than two thirds of respondents have not experienced IT skills shortages but 7% have been strongly or severely affected.

Respondents who said there they were strongly or severely affected by IT skills shortages were asked in what specific areas the biggest shortages were and the responses included: Microsoft skills, basic IT skills, advanced IT skills, IT support and implementation, Embrace, CAD and software developers.

When asked how they think the government can assist with the IT skills shortage, the top responses received were:

<b>Table 23</b>	
<b>Top responses for how government could assist with the IT skills shortage</b>	
<b>How do you think government could assist with the IT skills shortage?</b>	<b>N=279</b>
Training, workshops, open training centres, free training, at schools, work etc upgrading skills through training	48.7%
Government can't help	21.1%
Don't know	11.1%
Start IT training in school	8.6%
Assist students to get work, create work opportunities, appoint qualified personnel, no BEE when employing	6.1%
Improve/build infrastructure	4.3%

Source: BMI-T, 2009

When asked which agencies/parastatals/levels of government could be of assistance with the IT skills shortage, the answers with the most responses are shown in the table below.

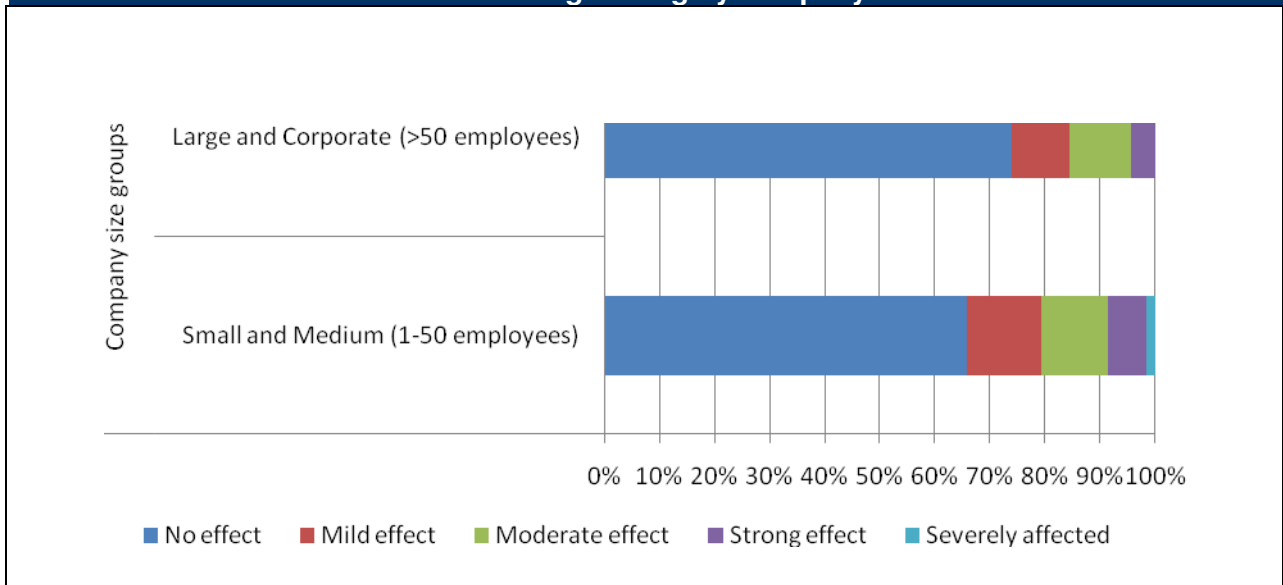
**Table 24**  
**Which organisations could help with the IT skills shortage?**

Which government agencies/parastatals/levels of government do you think could be of assistance?	N=241
Don't know/they can't help	27.8%
Department of Education	25.7%
Local/National government	16.2%
Other	12.4%
Department of Labour	11.2%
IT department/training/companies	6.6%

Source: BMI-T, 2009

Segmentations of IT skills shortage rating are shown below.

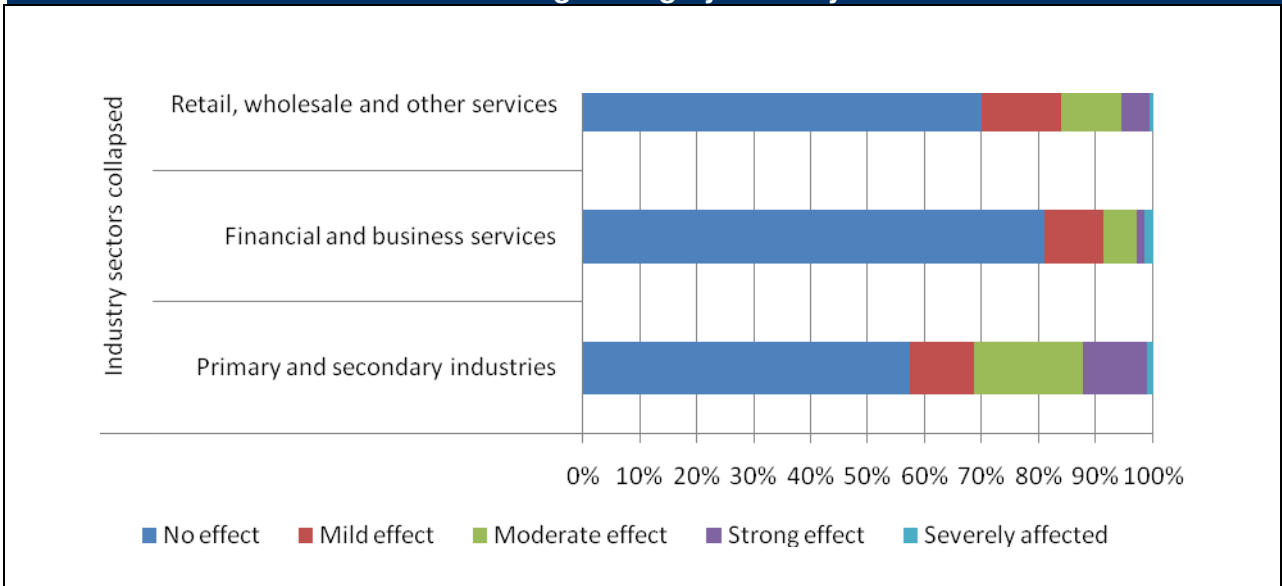
**Figure 126**  
**IT skills shortage rating by company size**



Source: BMI-T, 2009

Small and medium companies are more affected by IT skills shortages than large and corporate companies.

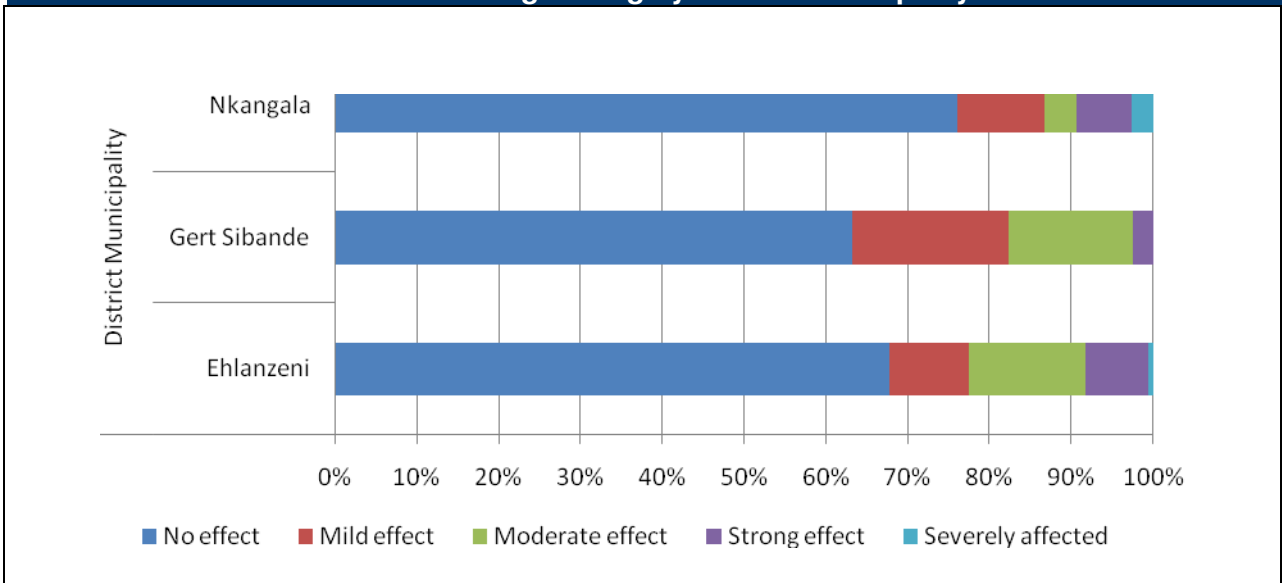
**Figure 127**  
IT skills shortage rating by industry sector



Source: BMI-T, 2009

Primary and secondary industries are more strongly affected by IT skills shortages.

**Figure 128**  
IT skills shortage rating by district municipality



Source: BMI-T, 2009

Nkangala has the most respondents with no effect but also the highest percentage that are severely affected by IT skills shortages.

## 8. GOVERNMENT SURVEY RESULTS

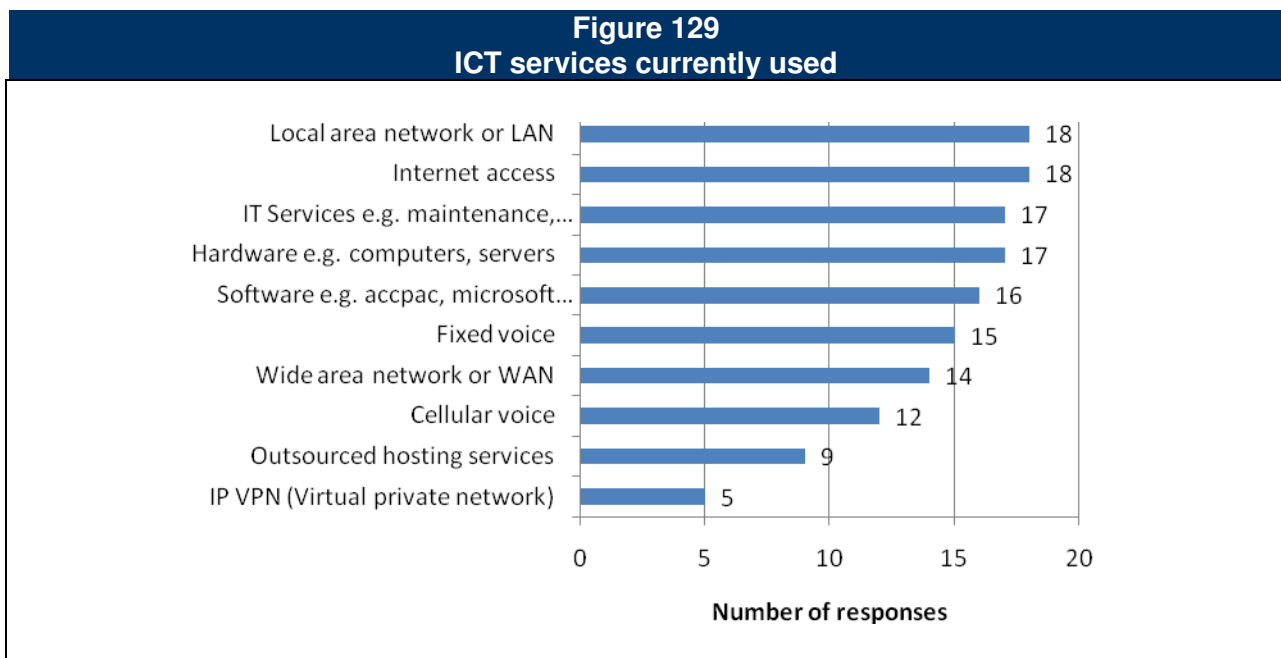
Government organisations were interviewed as part of this project to obtain qualitative information regarding the issues relating to IT and Telecoms provision to constituents by the specific provincial departments, municipalities and other relevant government organisations in Mpumalanga.

Nine (9) Provincial Departments and 9 local municipalities were interviewed. These included the Department of Health, Roads & Transport, Public Works, Education, Finance, Culture, Sports & Recreation, Economic Development & Planning, Local Government & Housing and the Premiers Office Mpumalanga.

The municipalities interviewed included the following: Gert Sibande, Msikaligwa, Kimjindi, Emalaheni, Emahazeni, Ehlanzeni District Municipality, Nkangala District, Malelane & Nkomazi Municipality and the Barberton Municipality.

### ICT Access and Usage

Respondents were asked which ICT services they currently use and who their primary supplier is.



Source: BMI-T, 2009

Both Departments and municipalities indicated that they all have internet access and fixed voice services. Internet access was mainly supplied by SITA (9 respondents) and 2 indicated their supplier for internet access was Telkom. For fixed voice, Telkom was the main supplier with 10 responses.

Only 5 municipalities say that they have cellular voice, whereas all Departments have cellular voice. Most indicated that provider was "own/personal choice", various suppliers, and 4 municipalities indicated that Vodacom was their supplier for cellular voice.

Three (3) municipalities specified that they had outsourced hosting services, whereas 6 Departments had this. All Departments were supplied with such hosting services by SITA. Municipalities indicated that Business Connection, CSS and Arivia were their suppliers.

All municipalities and Departments had LAN (Local Area Network). 8 were in-house systems; BCX provided 2 systems, SITA were the suppliers for 3 systems and the internal ITB was mentioned by 3 respondents.

Six Departments and 8 municipalities had WAN (Wide Area Network). Municipalities said they had in-house systems and 1 was supplied by BCX. 6 Departments indicated SITA was their supplier, whereas the others said ITB or did not know who supplied the WAN.

IP VPN (virtual private network), only 3 municipalities and 2 Departments had this service. Suppliers were SITA, BCX, Sentech, in-house and CSS.

All Departments indicated that they had hardware, software and IT Services.

Suppliers were:

- Hardware: SITA/ SITA approved contractors (5), in-house/ITB assisted (3), Transversal systems (1)
- Software: SITA/ SITA approved contractors (4), in-house/ITB assisted (3), Microsoft (1)
- IT Services: SITA (2), in-house (3), ITB (4),

All municipalities indicated that they had hardware, software and IT Services.

Suppliers were:

- Hardware: BCX (1), in-house (6),
- Software: Microsoft (3), BCX (2), SITA
- IT Services: in-house (5), BCX (2), Internet Solutions (1)

Respondents were asked how they would rate their primary supplier for each service overall in terms of performance and service.

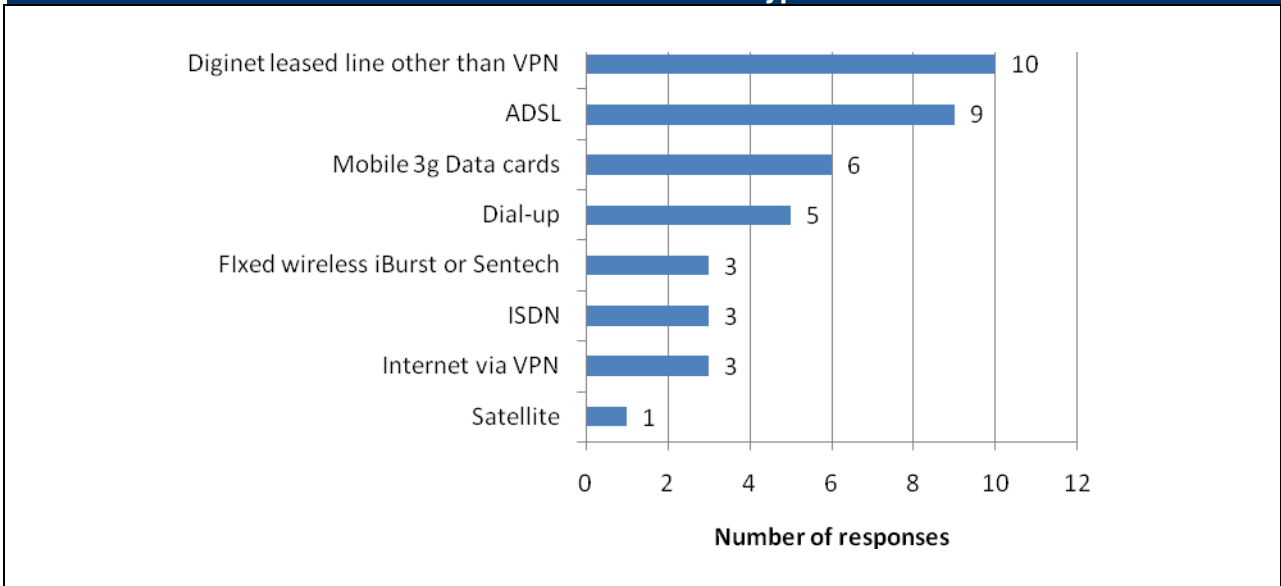
Ratings for all services were primarily average, good or excellent.

There were very few reasons for poor service and performance from suppliers, the two main responses were poor turnaround time and poor response time, or that the supplier was not performing to expected levels.

Respondents who had internet access were then asked what type(s) of internet connections they have.



**Figure 130**  
**Internet connection type**



Source: BMI-T, 2009

**Table 25**  
**Internet connection type by government organisation type**

	Provincial Department	Municipality	Total
Diginet leased line other than VPN	6	4	10
ADSL	4	5	9
Mobile 3g Data cards	1	5	6
Dial-up	4	1	5
Internet via VPN	3	0	3
ISDN	2	1	3
Fixed wireless iBurst or Sentech	2	1	3
Satellite	1	0	1
Total	9	9	18

Source: BMI-T, 2009

The respondents were asked which IT and Telecoms related services they provide for their constituents.

Very few Departments indicated that they provided services to their constituents. The only two Departments offering support were as follows: the Department of Economic Development and Planning said that they provided website access but that this was not fully operational yet. The Premier's Office indicated that they provided services "Just to hospitals and clinics and the admin block. There is no community support".

Six (6) municipalities offered a website for their constituents, allowing - for instance - easy access to registering on the database and customer support.

## IT and Telecoms issues for the constituents

Respondents were asked if they experienced any problems or issues with regard to delivering IT and Telecoms services to their constituents.

Most municipalities said that they had no problems at all with regard to delivering services to their constituents. However, two (2) municipalities specified that they had a lack of capital and therefore infrastructure for providing such services and that, to compound the problem, there was a low level of understanding and knowledge amongst constituents on how to use such services.

Reasons differed for each Department, as indicated below:

- Roads and Transport: Connectivity in our offices is a problem
- Health: bandwidth - the main issues are a lack of budget, network availability and IT literacy amongst constituents
- Education: budget constraints
- Finance: downtime, connection interruptions
- Premiers Office: Budget is a problem and SITA downtimes are too frequent
- Economic Development and Planning: No ICT infrastructure in rural areas
- Other department(s): cost of such systems, we have no budget

Respondents were asked which IT or Telecoms services or infrastructure would help them to provide improved services to their constituents?

Departments mentioned the following service and infrastructure:

- Bandwidth and increased broadband capability
- Implementation of internet kiosk in the Thusong centres throughout the Province
- Increased communication capacity for both voice and data
- Information centres with broadband facilities
- Interactive electronic archive through hosted web page - currently working on such a project
- Network bandwidth needs improvement
- Walk in centres in rural areas to provide service

Municipalities indicated very little, with the exception of access to prepaid services, electric meters and wireless VPN. However, 1 municipality mentioned that wireless broadband would help them. Another also indicated that wireless connectivity to broadband would help with community sites, VoIP, and that an SMS messaging system to help with billing and queries.

## IT and Telecoms Wish List

Respondents were asked in what IT or Telecoms services or infrastructure for external projects for constituents would they be investing in, in the next year.

Five (5) Departments indicated nothing/none. One indicated they would be investing in the rollout of Sentech V Star internet, another in setting up a private network, and a third Department said they would be looking into both local and national broadband options.

Three (3) municipalities indicated they were busy investigation options. Others indicated they were considering VoIP, prepaid services, ATM access to pay as you go systems, connect satellite office in libraries for communities and one would try to establish a more interactive website.

Respondents were then asked if they could have any IT and Telecoms services for constituents that they do not currently have, which would they want and why would they want it.

Departments had the following wish list:

- Record management systems: Quicker feedback
- Broadband: Improved access
- Increased bandwidth: To help with communication
- Broadband: Speedier internet access/systems
- Wireless internet: Will assist to bring government to constituencies
- Broadband Internet: Reach all constituents
- Monitoring & evaluation of municipal performance: Shared services as used by KZN government
- Broadband: Stimulate growth of economy through creation of infrastructure
- Increased budget: Need infrastructure and ECM
- VOIP: Cost savings and efficiency
- Wireless broadband: internet in private network so content can be filtered for educational purposes
- Broadband internet: To take government to the constituencies
- GPS based project management system for housing project: Control expenses & contracts, added module on HSS system
- VOIP: to improve communication with schools, and learners

Municipalities indicated the following:

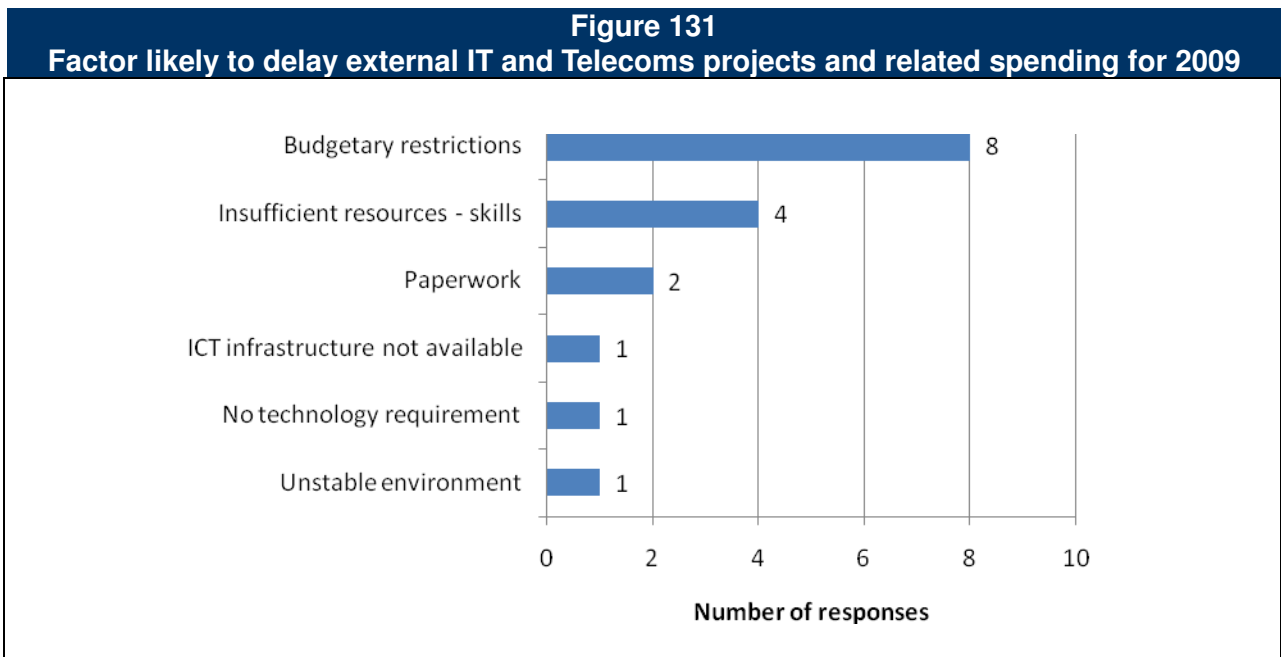
- Wi-Fi: Mesh whole region - mobile communication
- Wireless internet: Easier broader communication

- Wireless internet: improve internet access
- Internet connected payment system - pay point or webpage: Improve efficiency
- Training: Education on computer skills
- Integration between VOIP & fixed line: Cost effective
- VOIP: cost savings and shared services
- Outsourced services: reduced downtime
- Broadband services: Improve communications - community/selves, offer broadband services
- LCR: cost savings

### IT and Telecoms growth and spend

Respondents were asked what they thought the one factor that will be the most likely to delay external IT and Telecoms projects and related spending for 2009.

More than half the respondents in both Departments and municipalities indicated that budgetary restrictions was the one factor that is the most likely to delay external IT and Telecoms projects and related spending for 2009.

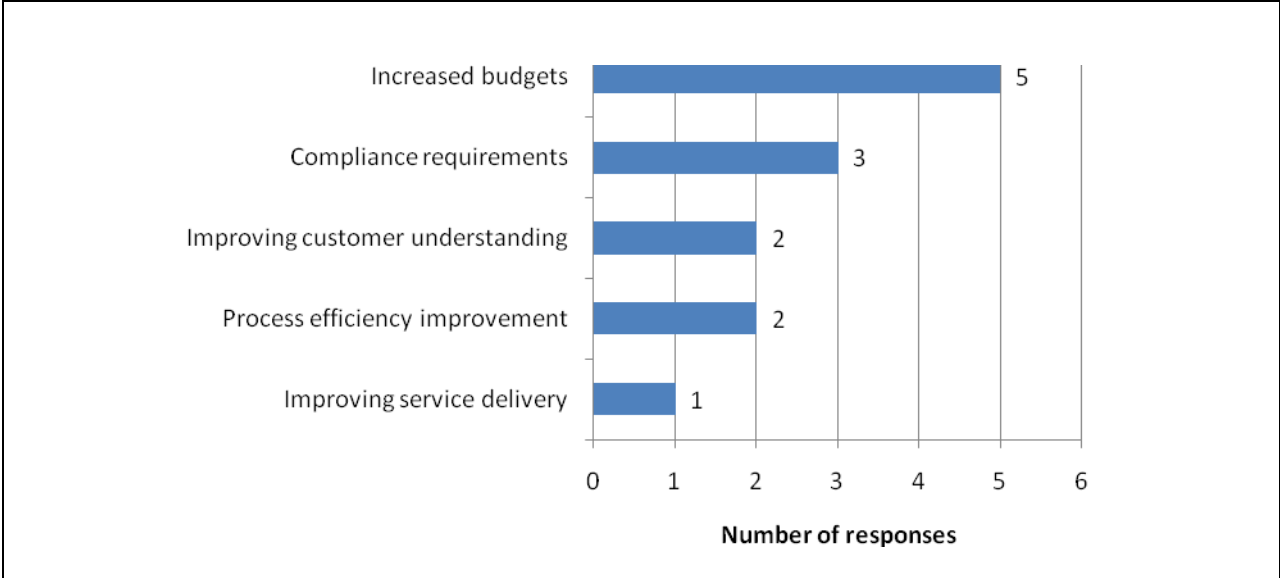


Source: BMI-T, 2009

Three (3) department respondents mentioned insufficient resources and skills, 1 municipality, one department said the ICT infrastructure was not available and 2 municipal respondents named red tape and lack of buy-in from political principals as factors affecting projects and related spending for 2009.

Respondents were then asked what one factor would be the most likely to accelerate external IT and Telecoms projects and related spending for 2009.

**Figure 132**  
**Factor most likely to accelerate external IT and Telecoms projects and related spending for 2009**



Source: BMI-T, 2009

Two departments and three municipalities mentioned increased budgets, improving customer understanding was given by 2 municipalities, compliance requirements was given by 3 departments.

### **IT and Telecoms projects/events/developments**

Respondents were asked to provide details on the IT and telecommunications projects, major events or developments presently undertaken by their organisation/Department for their constituents (NOT internal):

Departments:

Very few Departments indicated that they had any projects happening at the moment that were not internal. Those that are being undertaken are as follows:

- Disaster Recovery Plan
- GIS service based on integrated servers with platforms to accommodate all services
- Establishment of internet Kiosk

Municipalities:

- New 2nd and 3rd back-up generation
- Fleet management

- Establishing IT Dept
- GIS

Respondents were also asked to provide details on the IT and telecommunications projects, major events or developments completed in the last 2 years by their organisation/Department for their constituents (NOT internal):

Departments:

- Management system plan
- IT learnerships on open source - UBUNTU
- IT development for Public Libraries
- Thusong Service Centres

Municipalities:

- General maintenance and replacement
- Pre paid services
- Easy pay points
- Vending system
- Integration upgrade
- Website Development

Respondents were asked to provide details on the IT and telecommunications projects, major events or developments about to be undertaken by their organisation/Department for their constituents (NOT internal):

Departments:

- Disaster Recovery plan
- ICT indaba - provincial
- Thusong Service Centres

Municipalities:

- Bulk Services
- Website
- Shared Services

Respondents were asked to indicate their IT top priorities for the next 2 years:

Departments:

One Department indicated that the balance of projects were being held over due to budget constraints

- Thusong Service Centres (2 responses)
- Decentralise functions in districts
- Rolling out infrastructure
- ECM systems budget
- Improve network (WAN)
- Operating system (ECM)
- Connectivity and related benefits
- Demographic studies
- e-Government
- IT Security
- Document management
- Complete library project
- Provincial Archive
- Complete broadband project
- Provincial portal
- Broadband

Municipalities

- VoIP (2 responses)
- Integration of systems
- IT and service support
- Connect satellite offices
- Train users
- Wireless integration

- Disaster Centre
- Improve communications between municipal offices and satellite offices
- Improve communication between community and municipality
- Develop electronic control systems
- Full communications with all Departments via internet
- Shared service platform for district
- Interactive web site

Respondents were asked to indicate their Telecoms top priorities for the next 2 years:

Departments:

- Ensure connectivity
- VOIP
- Reduce telecom costs by using Private Network
- ICT Infrastructure (broadband/wireless)
- With Premiers Office develop communications network

Municipalities

- VOIP (2 responses)
- Service expansion
- Wireless phones
- Video Conference
- Broadband access systems

Respondents were then asked to indicate the top 3 key ICT strategic objectives:

Departments

- Planning to inform budgeting
- Improve customer care
- Developed & knowledge management system
- Increase ICT efficiencies held up by budget
- Connectivity



- Increase service delivery capacity through development of IT infrastructure
- Human resource development
- Increase communication capability
- Dissemination of education information to all levels
- Streamline operations to improve service and enhance the productivity of the workforce
- Provide flexibility to embrace emerging technologies and respond to new and changing requirements
- Knowledge and information management
- Management of desk top support
- Ensure availability of computer and related equipment
- Development of provincial portal

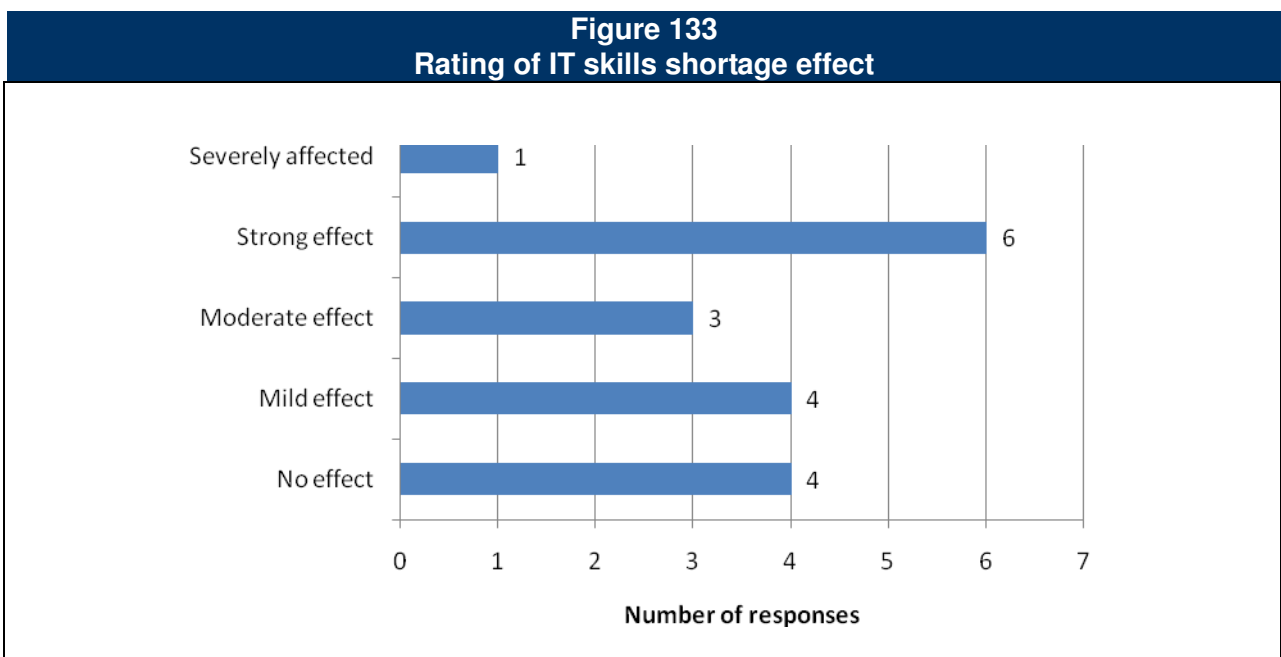
#### Municipalities

- Integration systems
- Development of customised applications
- Expansion of fleet management
- Provide better customer services
- Stable uptime
- Computer skills - training for employees
- Save costs - move from old to new technology
- Get junior personnel in Departments
- Upgrade network
- Integration of VOIP
- Telecommunication conference facilities
- Develop a shared services centre
- Thusong Service Centres/Dinaledi Schools wireless
- Access to information at affordable rate
- Improve communications between municipal offices & satellite offices

- Develop electronic control systems
- Improve interactive internet communications internally and externally
- Implement shared services platform with district and SITA
- Improve electronic management systems/ Develop electronic control systems

## IT Skills

Respondents were asked to rate whether their organisation has been affected by IT skills shortages:



Source: BMI-T, 2009

### Departments:

- No effect: 2 responses
- Mild effect: 2 responses
- Moderate effect: 1 response
- Strong effect: 3 responses
- Severely affected: 1 response

### Municipalities:

- No effect: 2 responses
- Mild effect: 2 responses
- Moderate effect: 2 responses

- Strong effect: 3 responses
- Severely affected: 0

Respondents were then asked in what specific areas they had the biggest shortages.

Departments mentioned the following:

- System development
- All skills groups problem with budgeting and staffing not an external issue
- Budgetary constraints
- HTML and Flash
- In general applicants skills good
- Networking
- Networking - general skills shortage in respect of basic computer literacy
- Not entry level, salary based competition for qualified posts. i.e. struggle to compete in market for IT specialists
- Open source

Municipalities referred to the following shortages:

- Networking, Microsoft, GIS
- Application development
- Open source applications rather than Microsoft
- Basic skills and networking skills
- Lack of qualified local technicians means repair times are slow

Respondents were asked if they thought government could assist with the IT skills shortage.

Departments had the following suggestions:

- Need to put uniform training in place
- Budget increases
- Interns training (from Premier's Office) to increase the number of skilled people
- An aggressive recruitment campaign
- Ensure competitiveness of IT industry salaries in order to contract qualified staff
- By providing internships, learnerships and special trading programs
- Training

- IT must be centralised, remove SITA and use centralised IT centre for development
- The Dept of Education should include IT in the curriculums for schools
- Learnership programmes
- Additional staff resources required, must be budgeted for
- Lots of students completing courses but do not get work experience - this needs to be addressed by government

Municipalities mentioned the following:

- Promotion of internships and providing competitive remuneration
- Shared services
- By providing learnerships to technicians
- Incentives for employment projects
- Through SITA - ease of procurement process
- Training
- Learnership programmes

Respondents were also asked which government agencies/parastatals/levels of government they thought could be of assistance.

Four (4) Departments indicated SITA, 3 the Premier's Office, 1 the department of education and 1 the Finance Department.

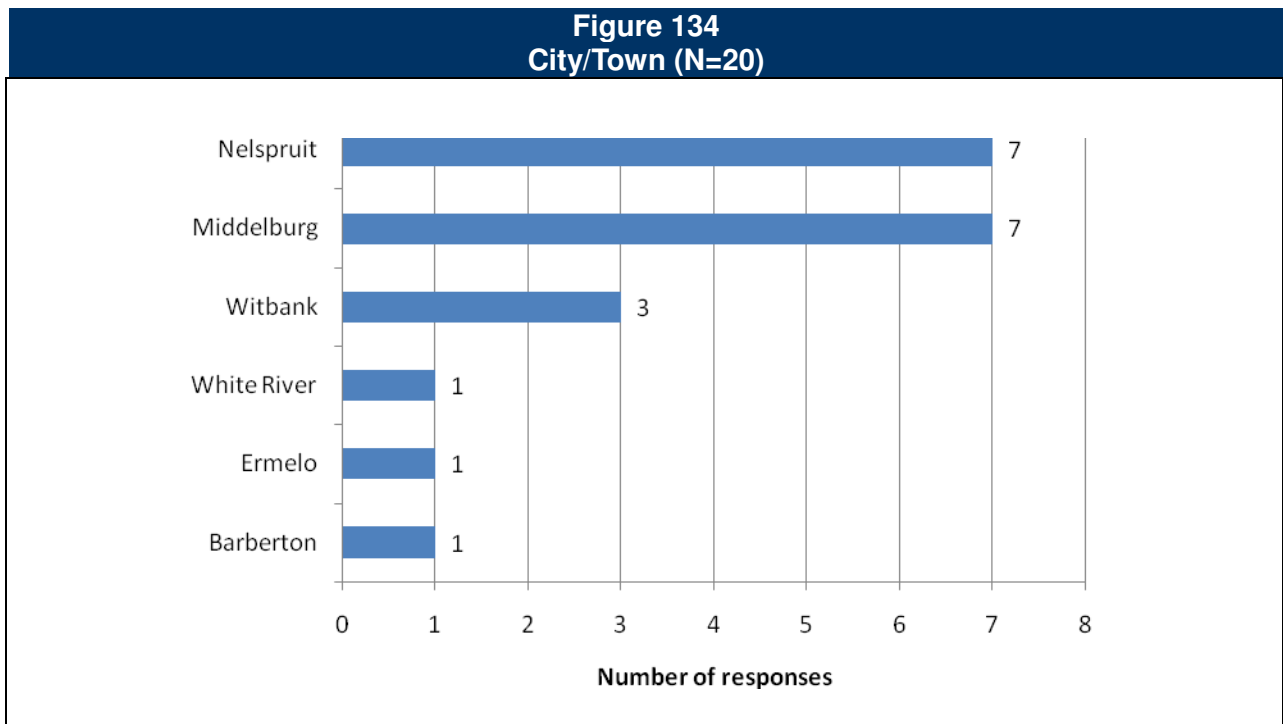
Four (4) municipalities indicated SITA, 3 said local government, 1 said the Premier's Office and one said no one.

## 9. ICT PROVIDER SURVEY RESULTS

Twenty (20) ICT providers were interviewed as part of this project to obtain qualitative information regarding the issues relating to IT and Telecoms infrastructure and services provision to organisations in Mpumalanga by ICT providers.

### Demographics

The 20 ICT providers surveyed were situated in the following cities/towns:



Source: BMI-T, 2009

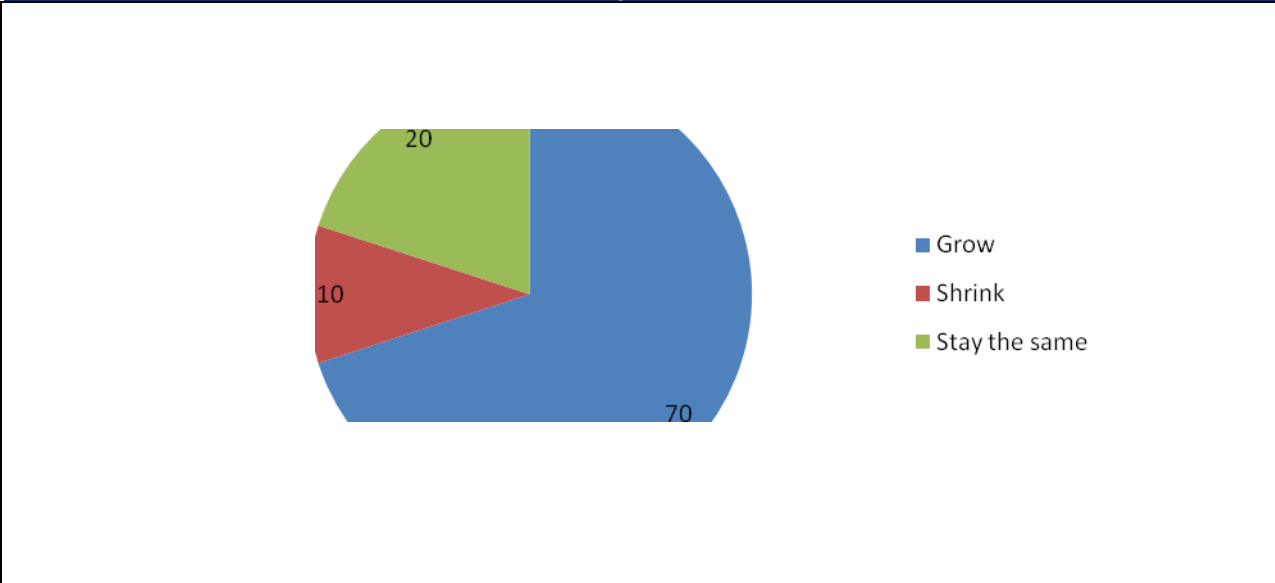
15 of the respondents were local companies only and 5 were national companies with office(s) in Mpumalanga.

16 of the ICT providers were SME's (1-50 employees) versus 4 who were large/corporate companies with more than 50 employees in total. 18 respondents had 50 or less employees in Mpumalanga, two respondents had 60 and 110 employees each in Mpumalanga.

All except one of the respondents had 50 or less computers, ICT employees and knowledge workers in Mpumalanga.

When asked if the respondents expected their annual turnover to change in the coming financial year, the figure shows 14 respondents expect it to grow, 2 to shrink and 4 to remain the same.

**Figure 135**  
**Do you expect your annual turnover to grow, shrink or stay the same in the coming financial year? (N=20)**

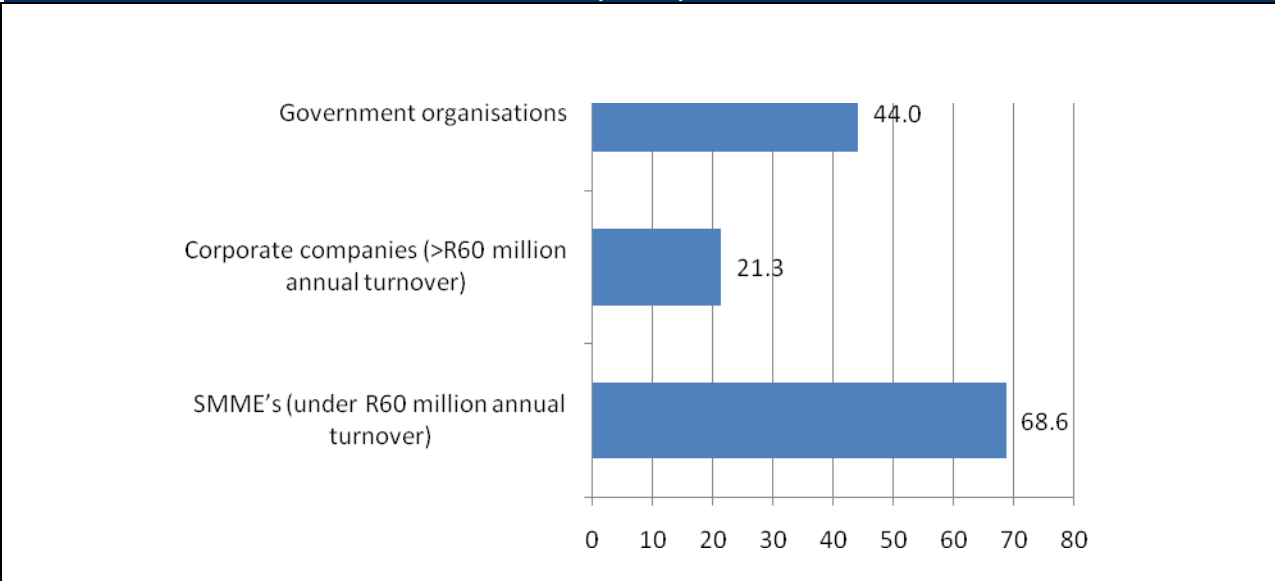


Source: BMI-T, 2009

15 of the 20 respondents' turnover stays in Mpumalanga.

When asked what is the percentage breakdown of client company sizes that respondents provide services to, 10 respondents indicated they provide ICT services to government organisations, 19 provide services to SMME's (7 of them only provide services to SMME's) and 12 respondents provide services to corporate companies. One respondent only provides services to government.

**Figure 136**  
**What is the percentage breakdown of client company sizes that you provide services to? (Mean)**



Source: BMI-T, 2009

## ICT projects

Respondents were asked to provide details on the major IT and telecommunications projects they have been awarded by government or corporate companies but have not yet started.

Only two of the ICT providers surveyed had projects awarded; one with unspecified ongoing contracts and agreements, the other with two maintenance projects for corporate companies.

Respondents were also asked to provide details on the major IT and telecommunications projects they are currently busy with for government or corporate companies.

- One company is busy with a three year office automation project for government.
- Two companies are involved in telecommunications projects.
- The majority of the projects are short term contracts of up to a year; however one project, servicing a municipality, is on a long term basis of ten years.
- Other short term projects for municipalities or government include installing anti-viruses and licences, shares services platforms, providing software, hardware and stationery, IT telephony contract and related services, supply tenders and VoIP installations.
- Mid to long term projects for municipalities or government include various maintenance contracts. The most comprehensive financial project detailed was for ongoing consultation, service provision and transversal services.
- Corporate projects include delivering stationery, maintenance and installations. The clients include SMMEs, mines and large corporations, with the projects being mostly short term.

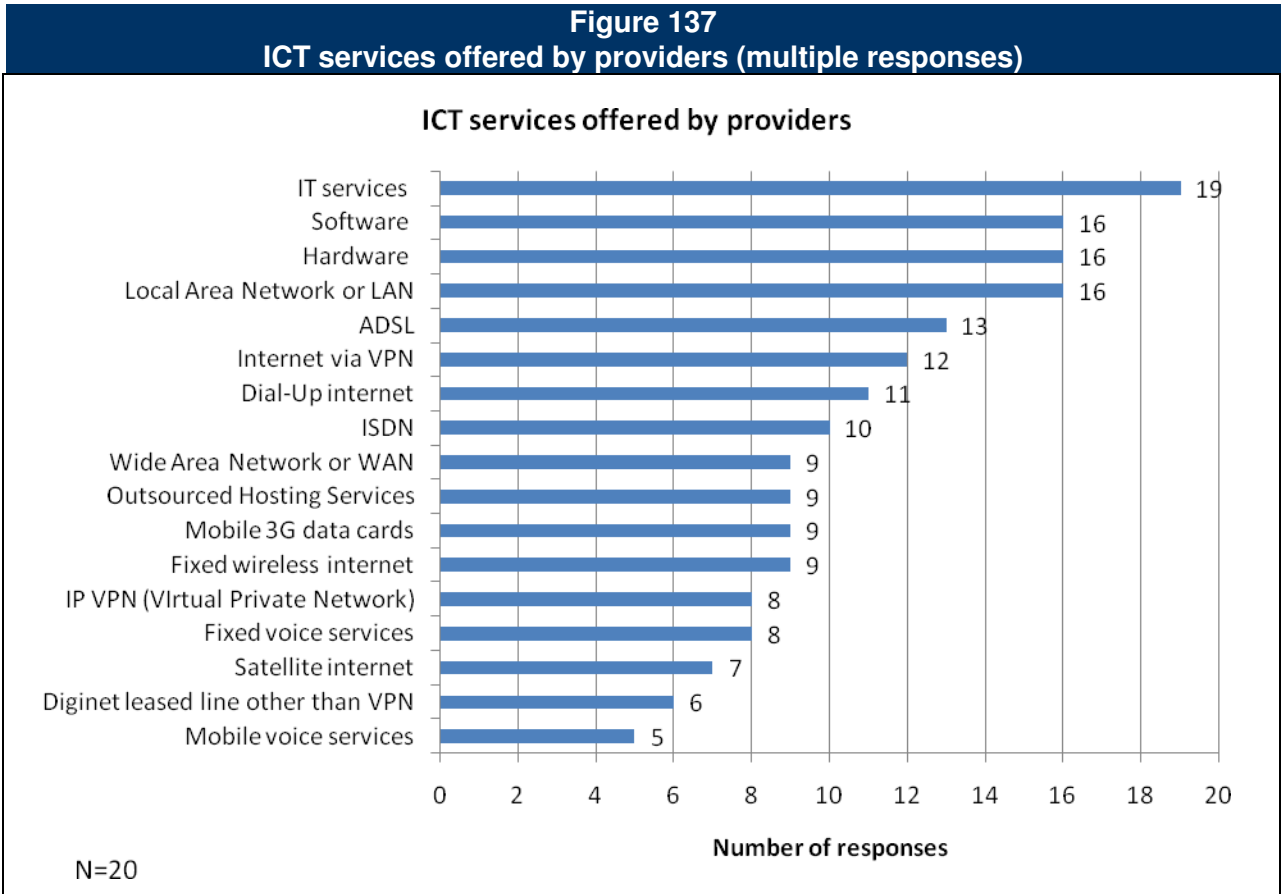
Respondents were also asked to provide details on the major IT and telecommunications projects completed in the last 2 years for government or corporate clients.

The majority of completed major IT and telecommunications projects were for corporate clients. These projects include providing management information systems, radio frequency, IT and printer maintenance. The largest financial project completed was the short term provision of hardware, software and stationery and IT maintenance, valued at R2 million.

Government projects included the installation and maintenance of computers for schools, the provision of software, hardware and stationery to the SAPD and government and the installation of wireless connectivity for the Department of Health.

## ICT services provided

Respondents were asked to indicate which of the following ICT services/infrastructure their company currently offers. The figure below shows that most ICT providers surveyed offer IT services, hardware, software and LANs.

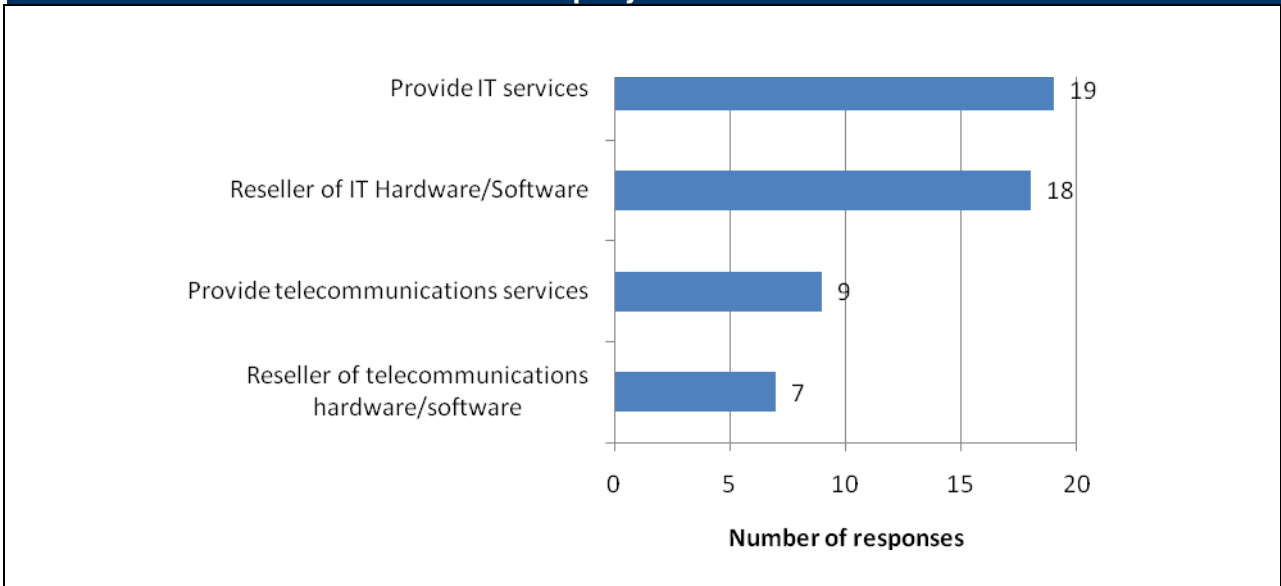


Source: BMI-T, 2009

Respondents were asked which business functions they provide, the figure below shows the results.



**Figure 138  
Company functions**



Source: BMI-T, 2009

None of the respondents surveyed import or export ICT products or services.

When asked if they will be investing in any new IT or Telecoms services or infrastructure to offer to clients in the next year, 60% of respondents indicated they would be.

The ICT services or infrastructure they will be investing in are shown below.

**Table 26  
What ICT services or infrastructure will you be investing in?**

ICT service/infrastructure	Number of responses
Busy registering with @lantic as an ISP to open an Internet Cafe	1
Depends on new technology	1
Don't know yet	1
Electronic fingerprints time & attendance device to be installed with clients	1
Internet systems	1
Looking at Neotel & Vox	1
Ongoing development of shared services platform and communication network (data)	1
PABX - VOIP	1
Training for personnel	1
VOIP	2
WAN	1
Wireless server room for monitoring crime	1
Always willing to upgrade to latest technology	1
PABX	1
Radio links	1

Source: BMI-T, 2009

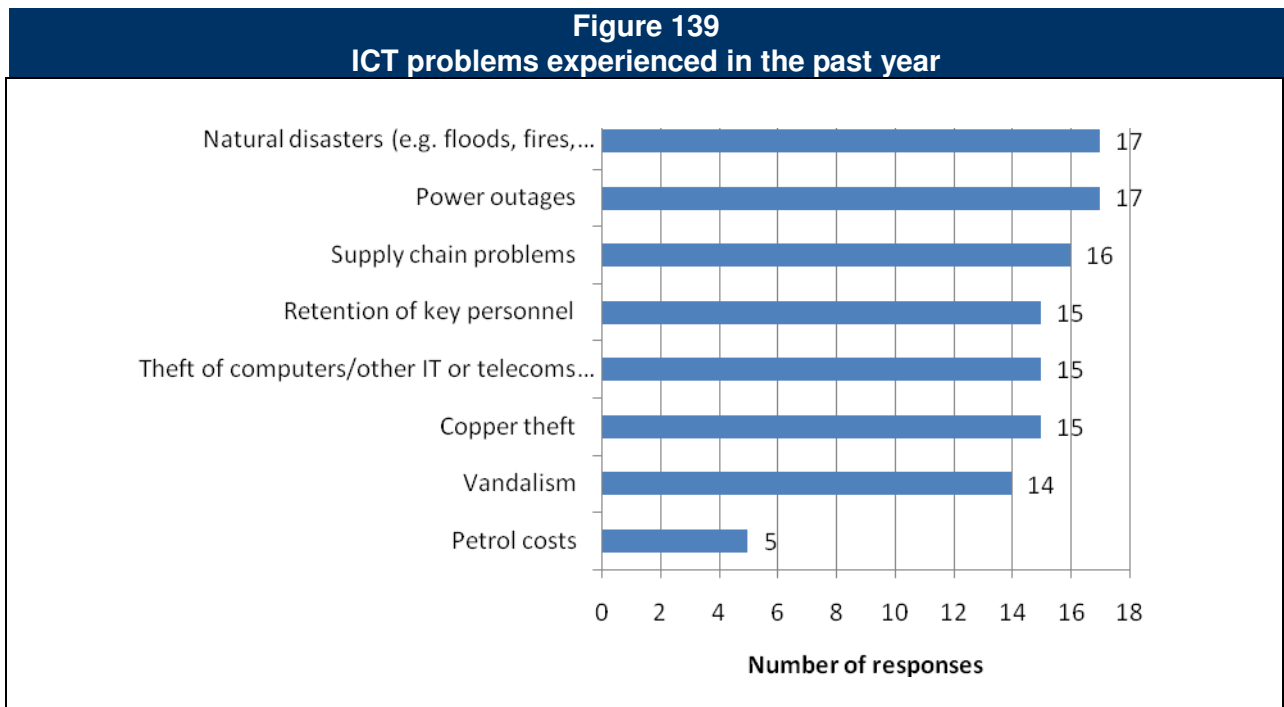
When asked how much they will be investing the table below shows the amounts provided.

Table 27 How much will you be investing in new ICT services/infrastructure?	
Amount (R)	Number of responses
100 000	1
200 000	2
2 000 000	1
30 000 000	1
50 000 000	1

Source: BMI-T, 2009

## IT and Telecoms issues

The figure below shows the ICT problems experienced in the last year.



Source: BMI-T, 2009

The average rating of the effect of these problems is shown below.

Table 28 Average rating for ICT problems experienced	
	Mean
Power outages	4.3
Copper theft	1.4
Vandalism	1.1
Natural disasters	1.2
Theft of computes/other IT or telecoms equipment	2.1
Retention of key personnel	0.8
Supply chain problems	2.3

Source: BMI-T, 2009

The major problems or issues experienced with regard to providing IT infrastructure or services to clients in the last year are summarised below.

Thirty percent of all providers questioned had no problems with providing IT infrastructure and services to their clients. The biggest problem was the lack of skilled and experienced technicians. The availability and delivery of new products, power outages, lack of infrastructure and price increases were among the other problems listed.

The major problems or issues experienced with regard to providing Telecoms infrastructure or services to clients are summarised below.

Again, the lack of skills was the biggest issue regarding the provision of telecoms infrastructure to clients. Other issues included cost increases and poor infrastructure. Telkom being the only fixed line provider proved to be a problem for more than 20% of those questioned.

## **Government issues**

Respondents were asked which IT or Telecoms services they have been promised by government or parastatals that have not materialised. The following answers were provided:

The second fixed line operator, sufficient ADSL and fibre optic links, although the majority of providers had no comment.

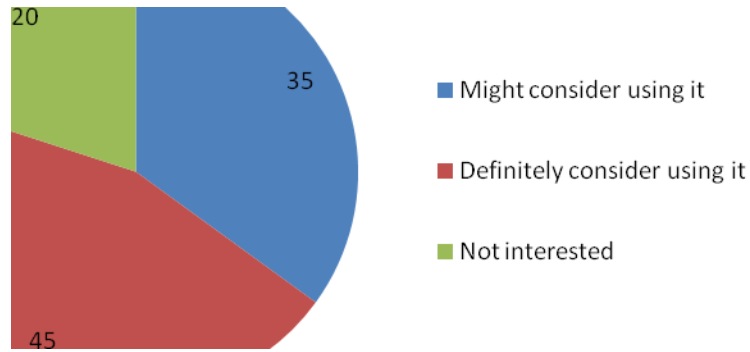
When asked what issues/problems, if any, they have with government with regard to their business, the most common problem with working with government is payment issues. Many of the providers mentioned that they currently have outstanding accounts.

Another shared issue was the battle to get IT-related tenders awarded.

Not being registered as BEE, affirmative action, corruption and crime in the government were also mentioned as problems experienced.

When asked if the Mpumalanga Provincial Government provided a good quality broadband internet service at a reasonable price, would they maybe consider using it, definitely consider using it or not be interested in using it, the figure below shows the results.

**Figure 140**  
**If Mpumalanga Provincial Gov provided a good quality broadband internet service at a reasonable price, would you consider using it? (N=20)**



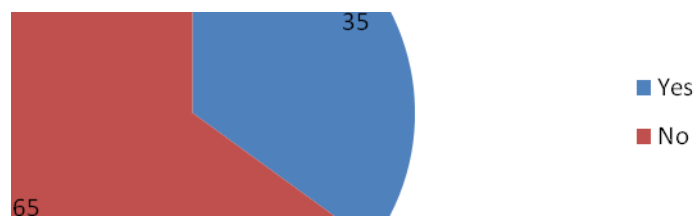
Source: BMI-T, 2009

The majority of respondents were interested in the possibility of saving costs and improving efficiency. Some providers were apprehensive as to whether the service would be reliable, the standard of service levels offered and how comprehensive the coverage might be.

Satisfaction with their current provider and the provision of their own broadband were the only reasons given for not considering using a provincial government supplied service.

Respondents were asked whether they have experienced ICT service/infrastructure delivery problems in the last year.

**Figure 141**  
**Have you experienced problems with ICT service/infrastructure delivery in the last year? (N=20)**



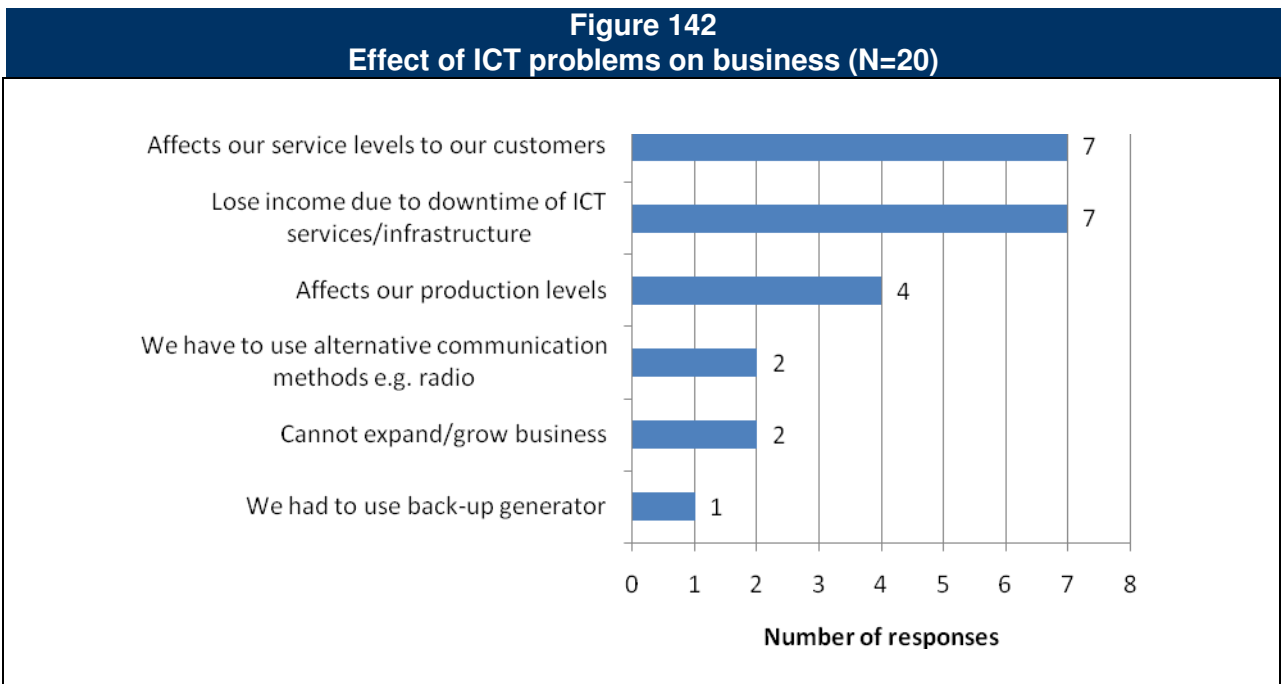
Source: BMI-T, 2009

Respondents were asked what caused these problems.

Telkom and a lack of infrastructure for Wi-Fi hot spots were the only common issues mentioned.

Other problems included power outages, high telephone costs, slow VPN, a need for suppliers to be educated and different ethics and expectations from service delivery suppliers.

Respondents were asked what effect these problems had on their business.

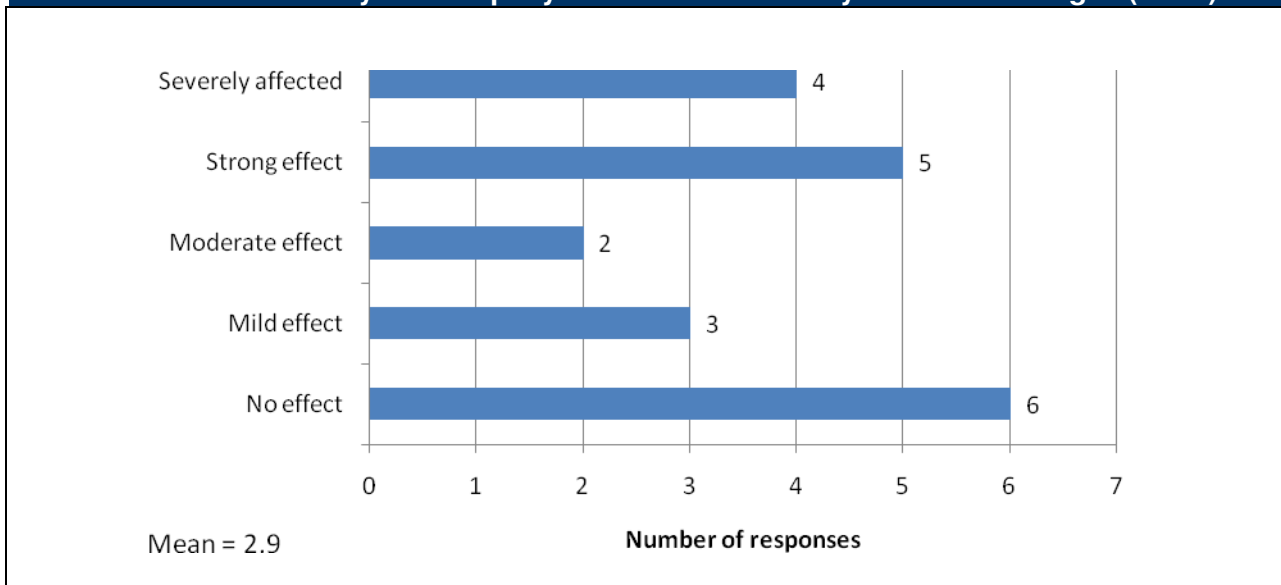


Source: BMI-T, 2009

## IT Skills

Respondents were asked to rate whether their company has been affected by IT skills shortages, from 1 to 5, 1 being no effect and 5 being severely affected.

**Figure 143**  
**Please rate whether your company has been affected by IT skills shortages (N=20)**



Source: BMI-T, 2009

When asked in what specific areas the biggest shortages are, the most common response was the lack of skills and experience in both the telecoms and IT areas. It was suggested that this is due to limited resources and the shortage of continual work opportunities in the province. The areas of networking, telecoms, wireless installations, Microsoft hardware support and general maintenance were also listed.

Respondents think government could assist with the IT skills shortage as follows:

More than half of the respondents suggested that the government provides IT and telecoms education, training and workshops at affordable prices, together with offering support for skills development. Other suggestions included “importing” personnel from outside the province who are more qualified and experienced and offering international work exchanges.

Another point raised was that government must create a demand for interns who have gone through internship training, as currently these programmes are faltering.

Other propositions included the improvement of transport from townships and making it easier for white-owned companies to get contracts.

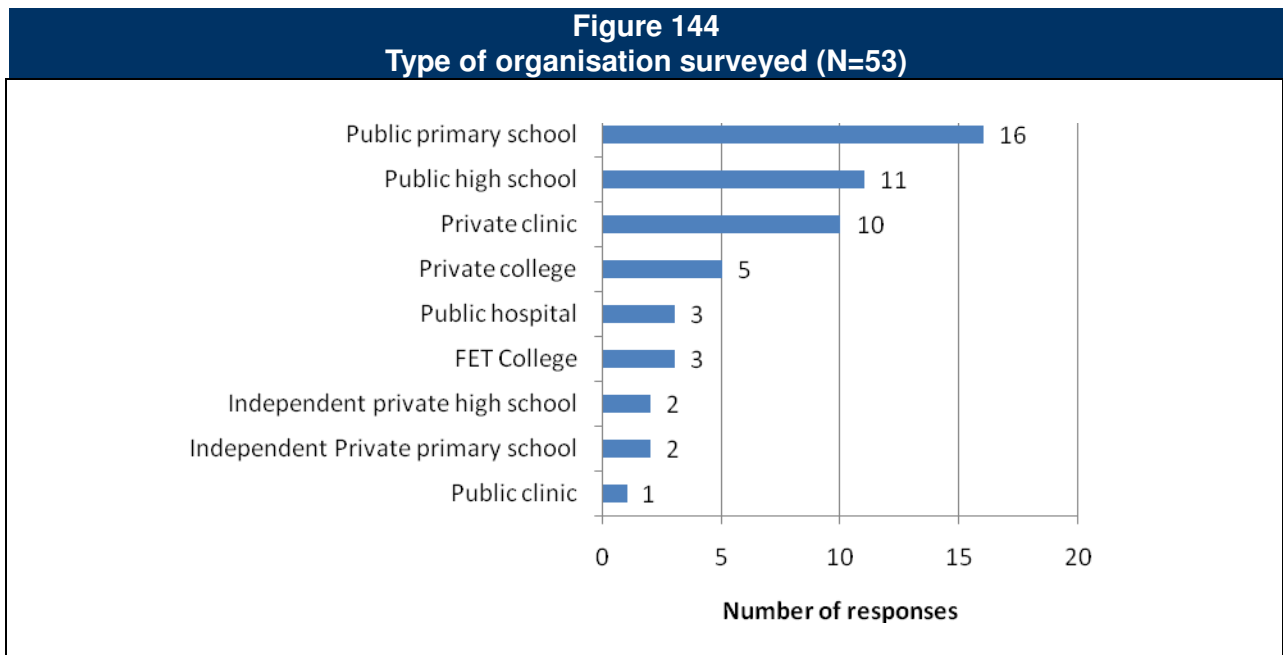
Thirty percent of those questioned felt government could not assist with this problem.

When asked which government agencies/parastatals/levels of government they think could be of assistance, SITA was listed as the most relevant agency to be of assistance. The Department of Labour, the Department of Education and the Premier’s office were also mentioned as departments which could assist with the IT skills shortage.

## 10. EDUCATION AND HEALTH SECTOR SURVEY RESULTS

Educational and health organisations were interviewed as part of this project to obtain qualitative information regarding the issues experienced by these organisations with regard to IT and Telecoms services for their staff and students.

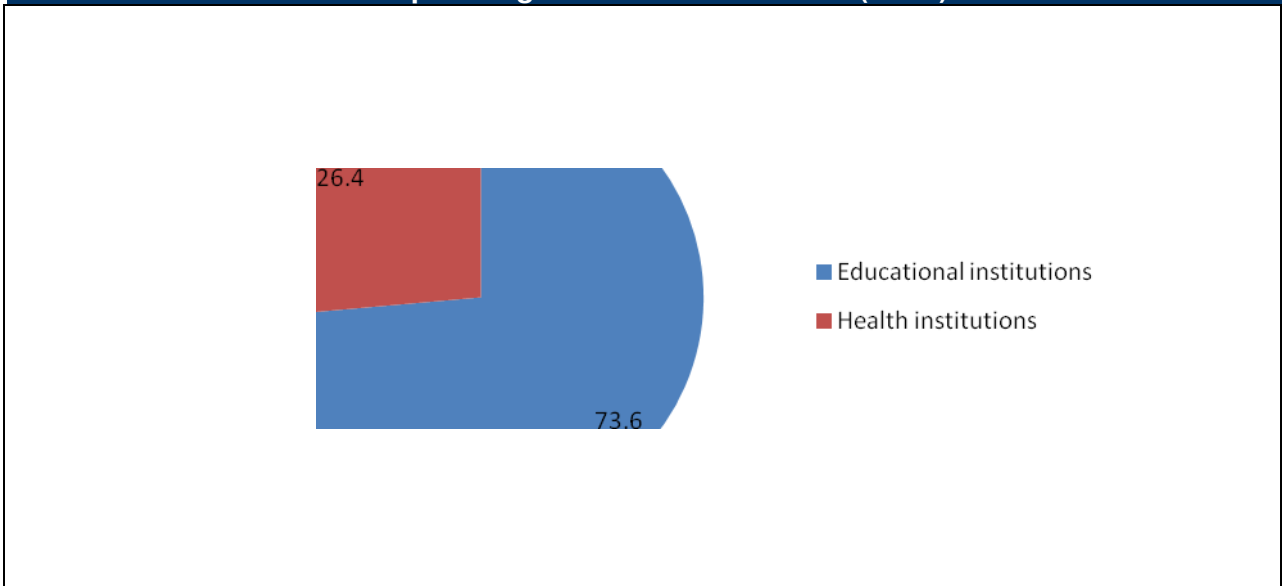
The different types and numbers of organisations surveyed are shown below.



Source: BMI-T, 2009

The breakdown of educational institutions (schools, colleges) versus health organisations (clinics and hospitals) is shown below.

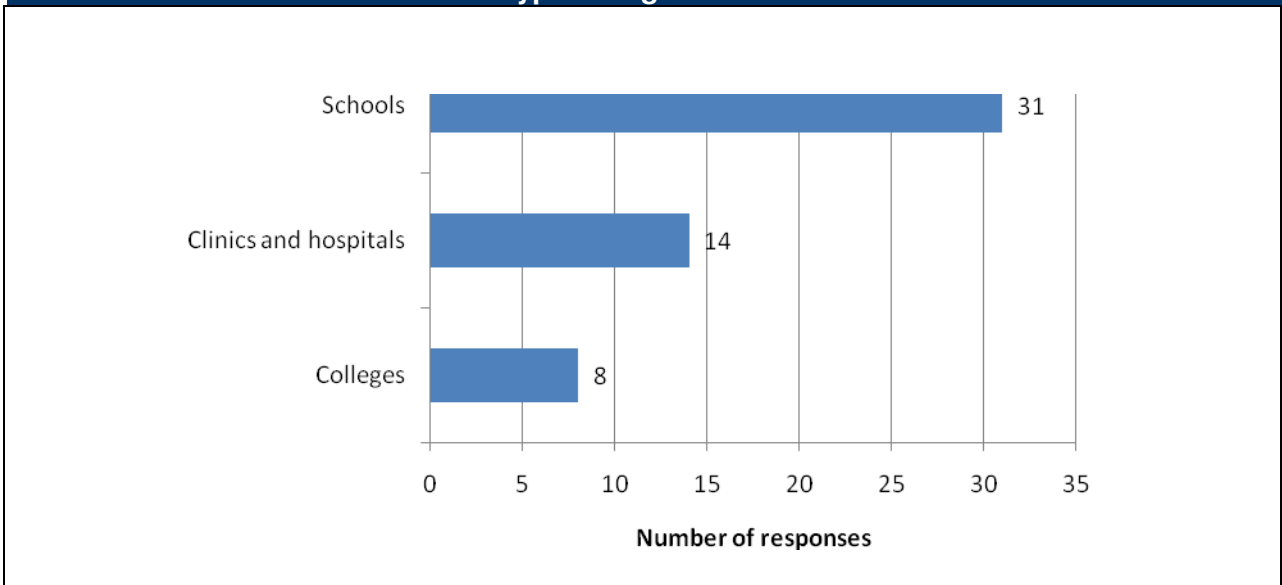
**Figure 145**  
Collapsed organisational breakdown (N=53)



Source: BMI-T, 2009

Almost three quarters of the respondents are educational institutions.

**Figure 146**  
Type of organisation



Source: BMI-T, 2009

The table below shows the cities or towns where the organisations surveyed are situated.

**Table 29**  
City/Town where organisation is situated

City/Town	Number of responses
Nelspruit	7
Kabokweni	6
Malelane	5
Barberton	4



White River	4
Standerton	3
Bethal	2
Middelburg	2
Witbank	2
Amersfoort	1
Barberton District	1
Burgersfort	1
Delmas	1
Dullstroom	1
Eerstehoek	1
Emjindini	1
Ermelo	1
Hartbeeskop	1
Hendrina	1
Kanyamazane	1
Lydenburg	1
Ohrigstad	1
Piet Retief	1
Sabie	1
Secunda	1
Shongwe	1
Wakkerstroom	1
Total	53

Source: BMI-T, 2009

The table below shows the number and type of organisations surveyed in each municipal district.

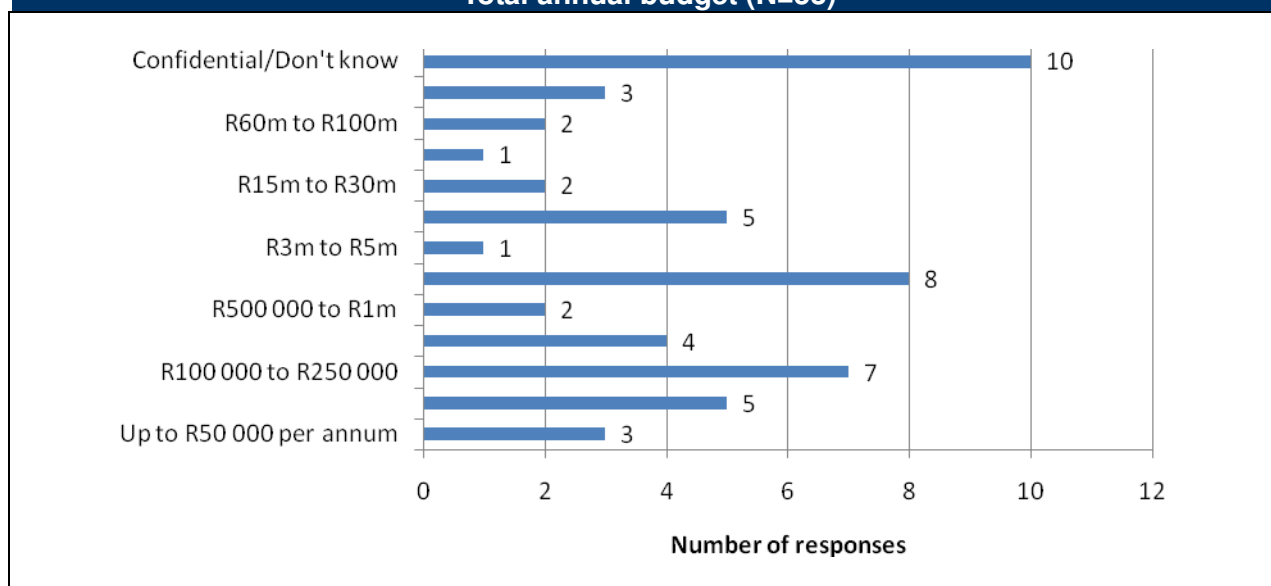
<b>Table 30</b>			
<b>Organisation type by municipal district</b>			
	<b>Municipal District</b>		
	Ehlanzeni	Gert Sibande	Nkangala
Schools	24	4	3
Clinics and hospitals	4	7	3
Colleges	6	1	1
Total	34	12	7

Source: BMI-T, 2009

The majority of schools and colleges surveyed are in the Ehlanzeni district, and the majority of clinics and hospitals are in Gert Sibande district.

The respondents' total annual budget for the last financial year is shown below.

**Figure 147**  
**Total annual budget (N=53)**



Source: BMI-T, 2009

Note: this is not a statistically valid sample size, use for qualitative purposes only

### Segmentation of annual budget

**Table 31**  
**Annual budget by type of organisation**

	Type of organisation			Total
	Schools	Clinics and hospitals	Colleges	
Up to R50 000 per annum	3	0	0	3
R50 000 to R100 000	5	0	0	5
R100 000 to R250 000	7	0	0	7
R250 000 to R500 000	3	1	0	4
R500 000 to R1m	2	0	0	2
R1m to R3m	4	1	3	8
R3m to R5m	1	0	0	1
R5m to R15m	4	0	1	5
R15m to R30m	1	1	0	2
R30m to R60m	0	0	1	1
R60m to R100m	0	1	1	2
R100m to R300m	0	3	0	3
Confidential/Don't know	1	7	2	10
<b>Total</b>	<b>31</b>	<b>14</b>	<b>8</b>	<b>53</b>

Source: BMI-T, 2009

The table above shows that the budgets for colleges range from R1 million to R100 million, the budgets for schools are lowest and the clinics and hospitals have the most respondents with budgets between R60 million and R300 million.

### **Number of employees, knowledge workers and students**

37 of the total of 53 of respondents had between 4 and 50 employees, the remaining 16 had between 53 and 1019 employees.

27 respondents had between 1 and 16 knowledge workers, the remaining 26 had between 17 and 350.

The number of students for schools and colleges ranged between 49 and 5000. The FET colleges ranged from 3000 to 5000 students, the schools ranged from 49 to 1292 students, private colleges ranged from 68 to 1030 students and the hospitals and one public clinic have between 220 and 600 students.

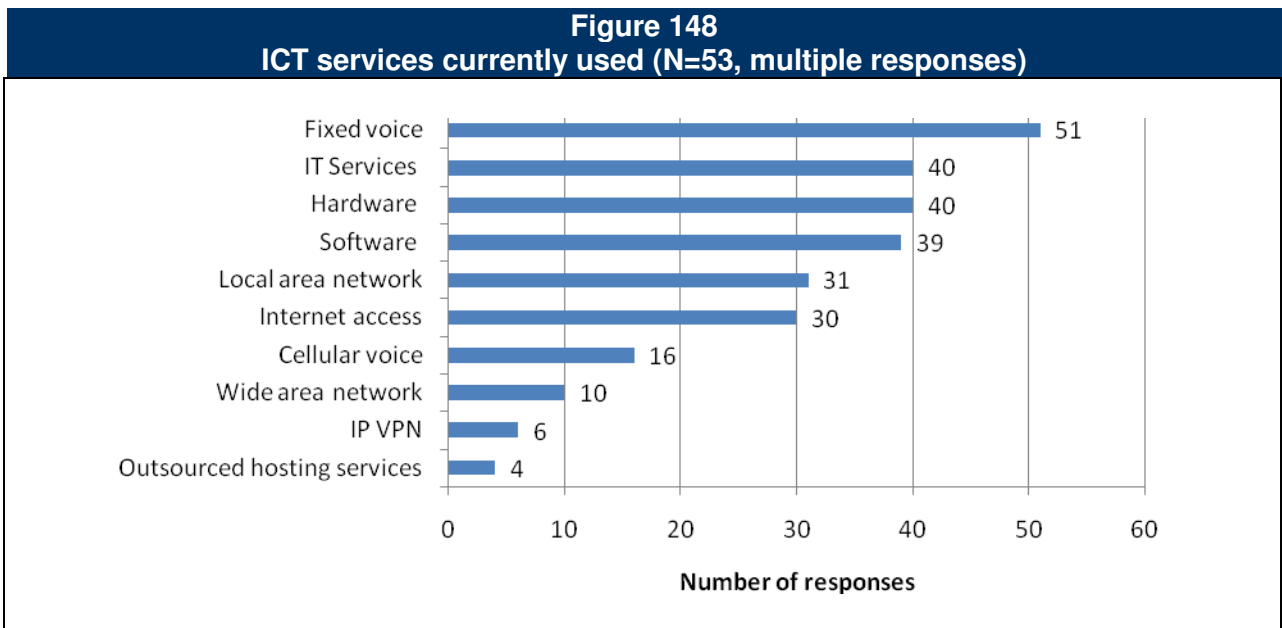
### **ICT demographics**

7 of respondents had no computers, 13 had between 1 and 5, 16 had between 6 and 50 and the remaining 16 had between 60 and 1500 computers (one answer was 'don't know').

The number of staff computers was zero for 8 respondents, 28 had between 1 and 5 and remaining 17 had between 9 and 100.

### **ICT Access and Usage**

ICT services currently used by respondents are shown below.



Source: BMI-T, 2009

All respondents using fixed voice use Telkom. For the remaining ICT services there are a variety of different suppliers.

Internet access suppliers include: Telkom (7), MWEB (6), @lantic (2), Internet Solutions (1), SITA (2), Cawy (1)

Cellular voice suppliers include: Vodacom (4), MTN (1), Nashua (4), Autopage (1), Logitel (1)

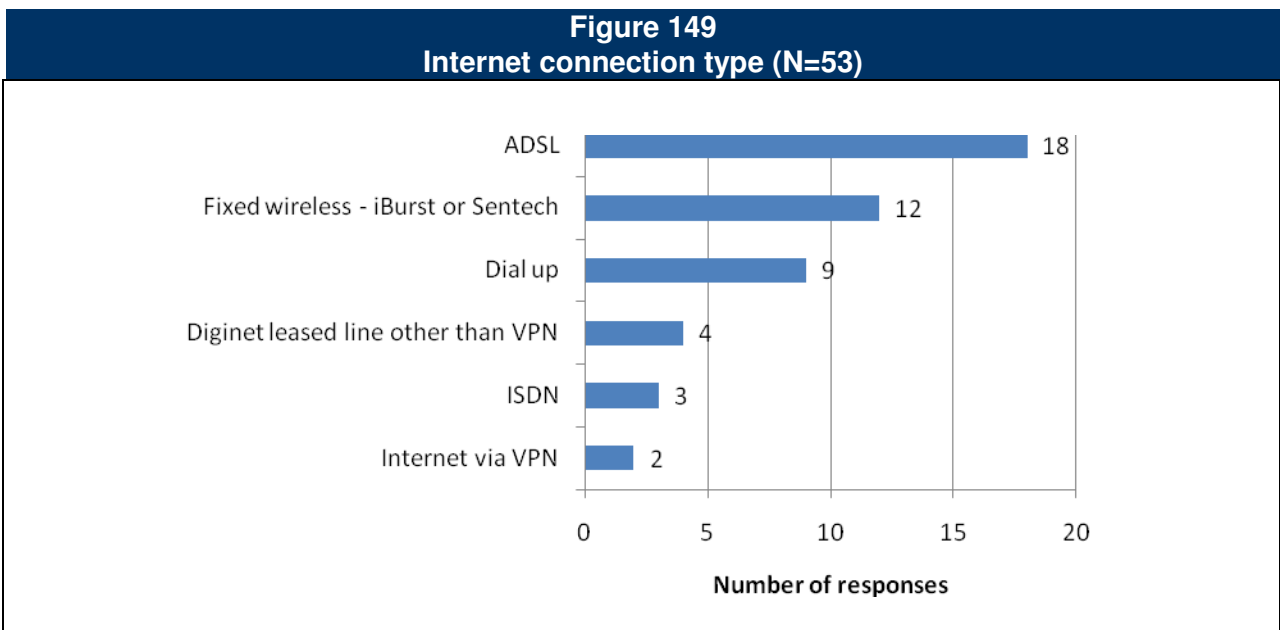
Outsourced hosting services suppliers include: Hertzner (2)

LAN suppliers include: SITA (3), in-house (18), Digisys (1), Department of Health (1), Department of Education (1)

WAN suppliers include: Eclipse (1), @lantic (1), SITA (1), Cawy (1)

Hardware, software and IT services suppliers include: KCS computers, Digisys, Nashua, Goodman, Computer corporation, Mecer, Hux Technologies, Incredible Connection, Bidcom, SITA, PCIQ systems, Cawy, Compuworx, C&S computers, Comptech, Pinnacle, Cordata and the Departments of Health and Education.

Respondents were asked to indicate the type of internet connections they have, if any.



Source: BMI-T, 2009

ADSL is the most common internet access connection type, followed by fixed wireless and then dial-up. Dial-up is an old connection method and is very slow, indicating that these organisations are in need of an upgrade.

**Table 32**  
**Internet connection type by organisation type**

	Schools	Clinics and hospitals	Colleges
ADSL	12	2	4
Fixed wireless - iBurst or Sentech	7	3	2
Dial up	7	2	0
Diginet leased line other than VPN	0	1	3
ISDN	1	1	1
Internet via VPN	1	0	1

Source: BMI-T, 2009

A lot of schools still rely on dial-up, although a good proportion of them have ADSL or fixed wireless internet. Only 28 of the total 31 schools have internet access.

Only 1 of the colleges surveyed does not have internet access. All FET colleges have internet access. All hospitals have internet access.

Only 2 out of 11 clinics have internet access.

3 of the 31 schools surveyed do not have internet access.

## **IT and Telecoms issues**

When asked what the major problems or issues experienced with regard to IT (Hardware, software or IT services) are, of the schools respondents, financial limitations was the most common issue raised, with specific mention made of the high cost of licences, installation, maintenance, internet connections, upgrading systems and insurance.

A total lack of support, both technical and financial, was also an issue with many respondents stating that there was a lack of on-site skills and although the Department of Education offered maintenance services, the turnaround times were very poor.

Other problems included having no computers, having no electricity or connectivity facilities, having access only to old hardware which cannot support upgraded software, lightning and other weather-related issues, viruses, poor infrastructure and not having campuses or systems networked.

The lack of hardware and funding were the most common issue for the respondents from clinics and hospitals.

IT support was another major problem with comments stating there is no response to requests for help, very slow support, poor wireless services, departments blaming each other for poor assistance and no skills training.

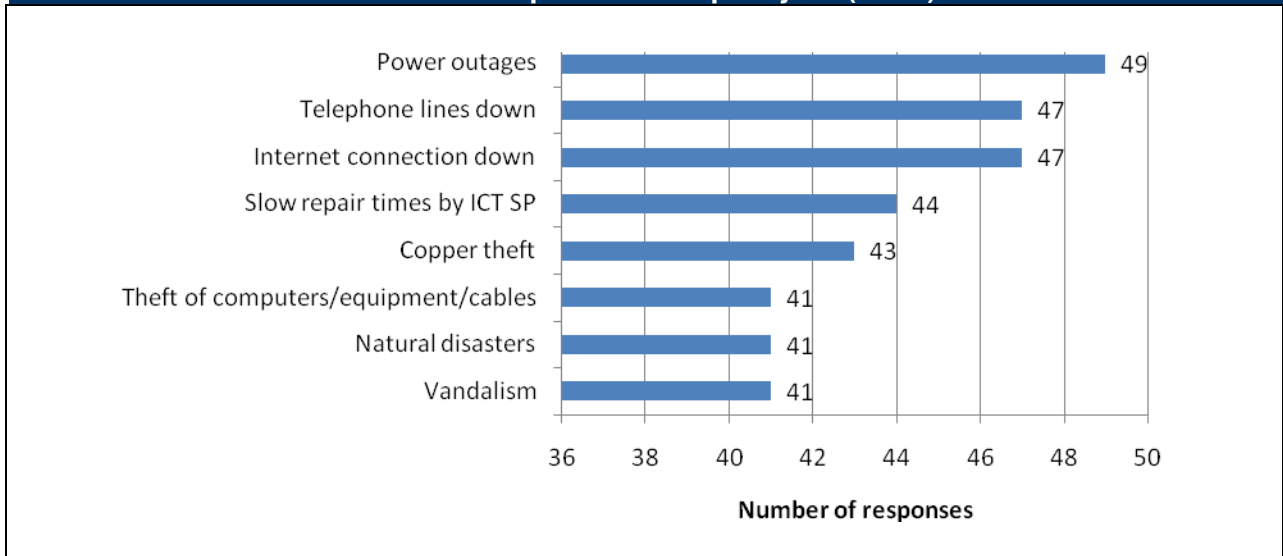
When asked what are the major problems or issues that you experience with regard to Telecoms (Fixed or cellular voice or internet services), the majority of respondents, from both clinics and schools, stated telephone or internet lines going down as their most prominent problem. Reasons given included cable theft, lightning and other weather-related strikes and power-outages.

Another issue, which only worsens the problem of lines going down, is very poor and slow maintenance from the fixed line operator.

### *Problems experienced in past year*

Respondents were asked: Which of the following problems have you experienced in the past year?

**Figure 150**  
**Problems experienced in past year (N=53)**



Source: BMI-T, 2009

The figure above shows that many problems have been experienced by the respondents.

**Table 33**  
**Problems experienced by organisation type**

	Schools	Clinics and hospitals	Colleges
Power outages	29	13	8
Copper theft	23	12	8
Vandalism	22	11	8
Natural disasters	23	10	8
Slow repair times by ICT service provider	24	12	8
Internet connection down	26	13	8
Telephone lines down	25	14	8
Theft of computers/equipment/cables	22	11	8
Total	31	14	8

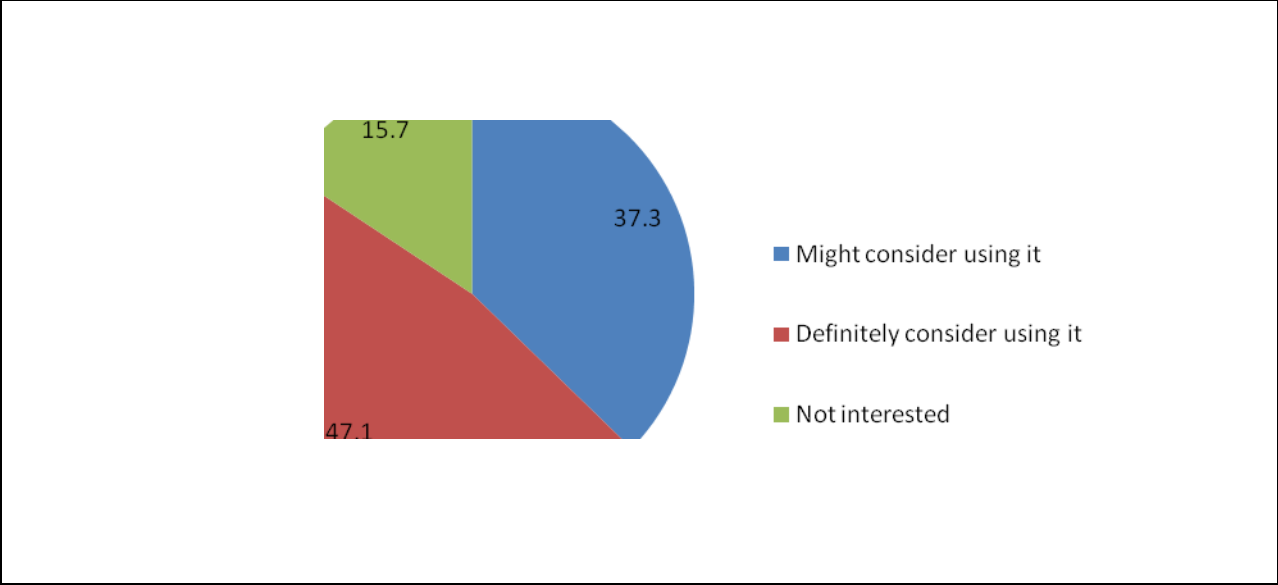
Source: BMI-T, 2009

The majority of respondents for each type have experienced all the problems mentioned.

### *Mpumalanga Provincial Broadband*

If the Mpumalanga Provincial Government provided a good quality broadband internet service at a reasonable price, respondents were asked if they would consider it.

**Figure 151**  
**If the Mpumalanga Provincial Government provided a good quality broadband internet service at a reasonable price, would you maybe consider using it, definitely consider using it or not be interested in using it? (N=53)**



Source: BMI-T, 2009

The respondents were asked if they have experienced ICT service/infrastructure problems at their organisation in the last year. The relatively high numbers that have not may also be due to the lack of ICT services and infrastructure available at some of these organisations.

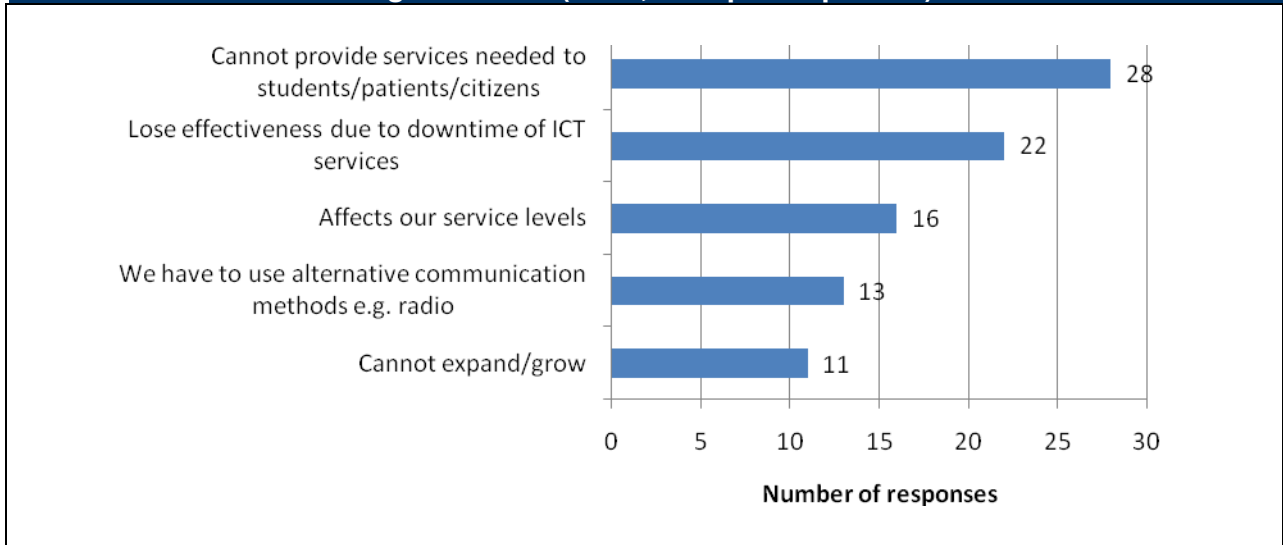
**Table 34**  
**Affected by ICT problems by type of organisation**

	Yes	No
Schools	17	14
Clinics and hospitals	9	5
Colleges	3	5
Total	29	24

Source: BMI-T, 2009

If the respondents have experienced problems above, the effect is shown below.

**Figure 152**  
**What is the effect of these problems with ICT infrastructure and services on your organisation? (N=53, multiple responses)**



Source: BMI-T, 2009

The table below shows that less than half the colleges are affected by ICT problems, 17 out of 31 schools are affected and 9 out of 14 clinics and hospitals are affected, with not being able to provide services being the biggest problem.

**Table 35**  
**Effect of ICT problems by organisation type**

	Schools	Clinics and hospitals	Colleges	Total
Cannot expand/grow	8	1	1	10
Cannot provide services needed to students/patients/citizens	16	9	2	27
Lose effectiveness due to downtime of ICT services	14	6	2	22
Affects our service levels	9	5	2	16
We have to use alternative communication methods e.g. radio	6	6	1	13
Total	17	9	3	29

Source: BMI-T, 2009

## IT and Telecoms growth and spend

The budgets are very varied for the different organisations surveyed.

Private clinic budgets are low for those who answered, 2 had below R100 000 for IT and Telecoms each, one respondent had an IT budget of R400 000 and Telecoms budget of R1 million.

Hospitals range from R1 million to R8.5 million.

Most public schools had budgets well below R100 000 each for IT and Telecoms.

For private schools they were half up to R100 000 and half between R100 000 and R250 000.

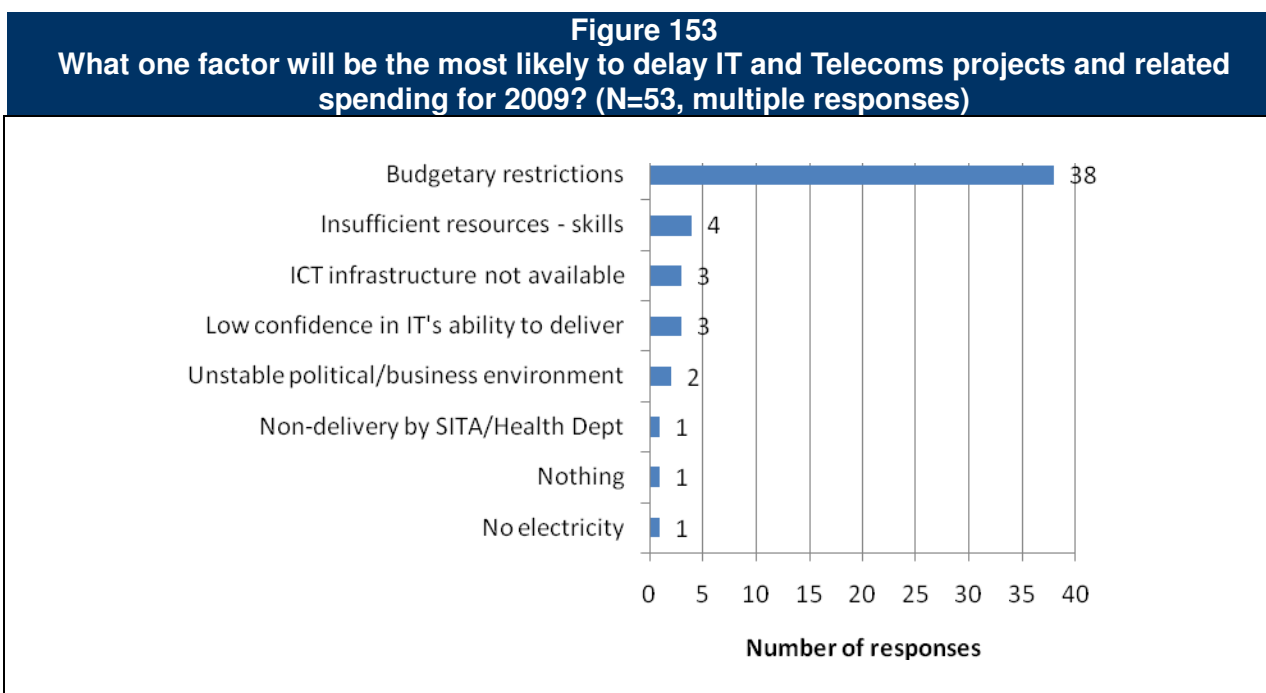


2 FET colleges had budgets between R1 and R1.5 million for IT and between R500k to R1 million for IT and Telecoms respectively, and the other R2,5 million for IT and R900k for Telecoms.

Private college budgets for IT and Telecoms are mostly up to R100k only, with one with between R100k and R250k.

Budgets are mostly expected to increase, with only 3 decreases in budgets expected.

The factors delaying ICT spend are shown below.



Source: BMI-T, 2009

Budgets are by far the biggest inhibitor to ICT spend.

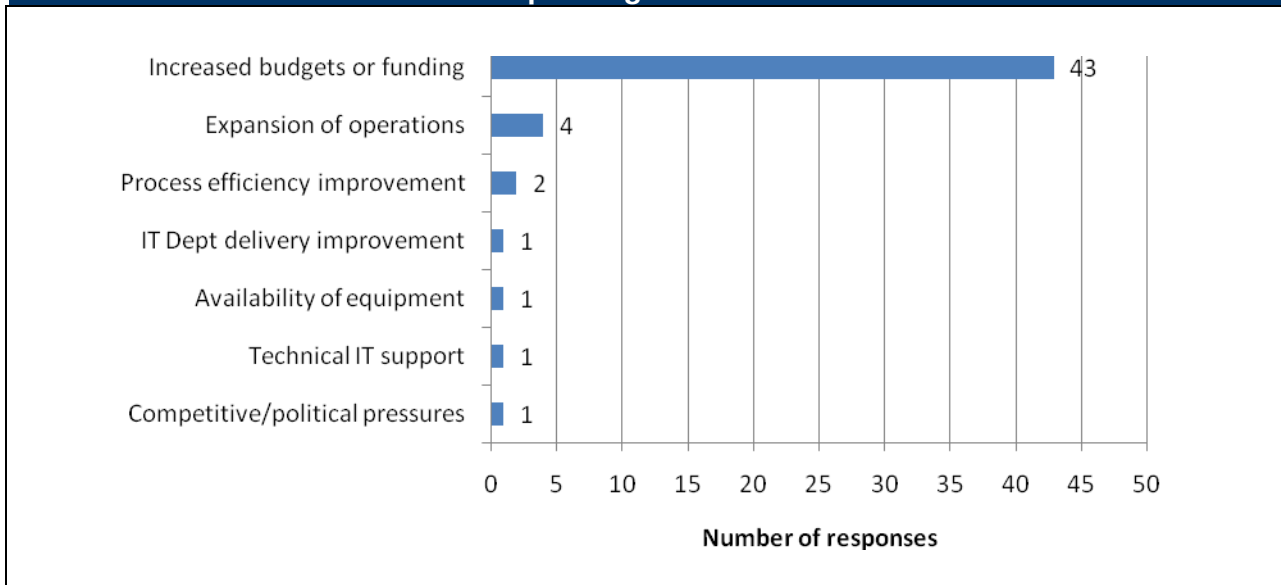
**Table 36**  
**Factors delaying spend by organisation type**

	Schools	Clinics and hospitals	Colleges	Total
Unstable political/business environment	1	0	1	2
Low confidence in IT's ability to deliver	2	1	0	3
Insufficient resources - skills	2	2	0	4
Budgetary restrictions	22	9	7	38
ICT infrastructure not available	2	1	0	3
No electricity	1	0	0	1
Nothing	1	0	0	1
Non-delivery by SITA/Health Dept	0	1	0	1
<b>Total</b>	<b>31</b>	<b>14</b>	<b>8</b>	<b>53</b>

Source: BMI-T, 2009

The factors most likely to accelerate IT and Telecoms projects and related spending for 2009 are shown below.

**Figure 154**  
**What one factor will be the most likely to accelerate IT and Telecoms projects and related spending for 2009?**



Source: BMI-T, 2009

Again, budgets are the main driver for spend.

**Table 37**  
**Factors accelerating spend by organisation type**

	Schools	Clinics and hospitals	Colleges	Total
Increased budgets or funding	25	11	7	43
Process efficiency improvement	1	1	0	2
Competitive/political pressures	1	0	0	1
Expansion of operations	3	0	1	4
Technical IT support	0	1	0	1
Availability of equipment	1	0	0	1
IT Dept delivery improvement	0	1	0	1
Total	31	14	8	53

Source: BMI-T, 2009

### IT and Telecoms Wish List

Respondents were asked: If you could have any IT and Telecoms services that you do not currently have, which would you want and why? (e.g. Broadband internet, wireless internet, Voice over IP, least cost routing, outsourced services etc.)

The schools respondents' "wish lists" were very basic, including land line telephones, computers and internet connections. Wireless, ADSL, VoIP and broadband were requested for cost saving and productivity reasons.

Other needs included data projectors, interactive boards to improve education quality, WAN in order to communicate with other campuses, switchboards and photocopiers.

Anti-virus programmes were also listed.

The requests from the clinics were even simpler: land line telephones for basic communication reasons, computers to run databases of patients and their histories; fax

machines to order medicines; broadband facilities for telemedicine; email for online medicine orders and to communicate with head office and a photocopier in order to make copies of patients' ID documents. VoIP was also listed in order to attempt to lower telephone bills.

When asked: Which IT or Telecoms services have you been promised by government or parastatals that have not materialised?

"No services" was the most common response.

Others included providing equipment; telephones, computers, fax machines, photocopy machines, interactive boards; and services such as internet connectivity, ADSL lines, wireless communication and satellite connections.

Services promised included assistance for installation, maintenance and training.

Respondents were asked which IT or Telecoms services that they do not currently have would help them to be able to work more efficiently or assist them or their learners/patients/citizens.

Of the schools respondents, interactive boards were the most needed facility, while the clinics mostly needed computers and telephone lines. Other requests included access to the internet, VoIP, wireless connectivity, email, WAN, private networks, and data projectors.

The IT or Telecoms services respondents will be procuring in the next year Are:

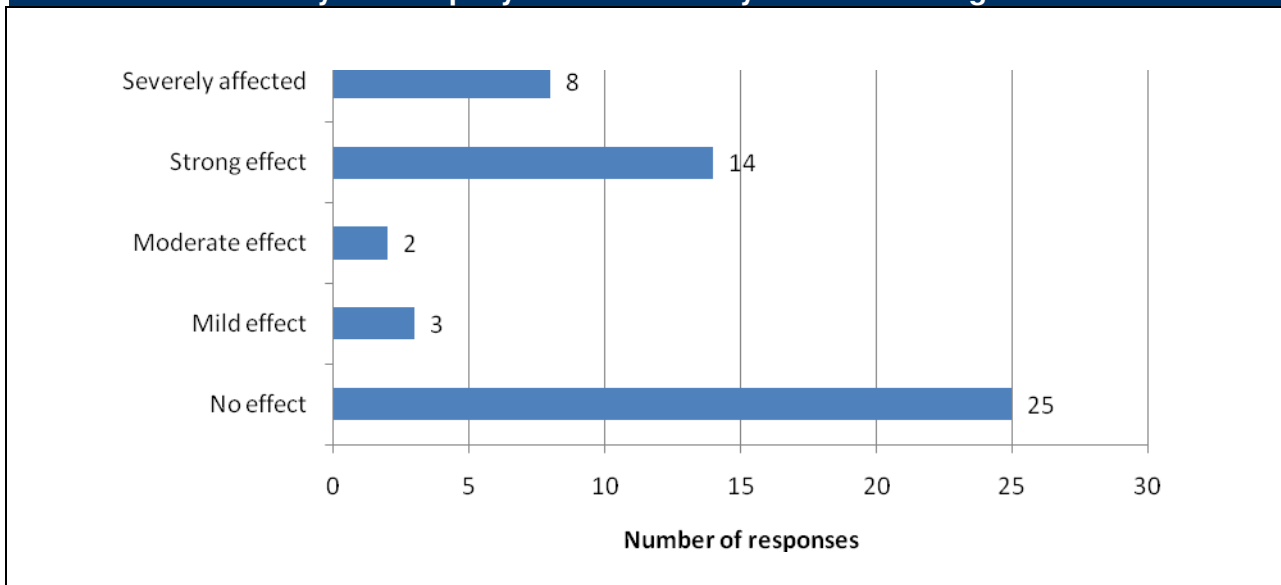
An overwhelming number of respondents indicated that there would be no funding for any IT or telecoms services in the next year.

The balance of respondents listed, computers, fax machines, internet access, interactive boards, VoIP, WAN, software upgrades, printers and PABX as services they are planning on acquiring in the year to come.

## **IT Skills**

Respondents were asked to rate whether their company has been affected by IT skills shortages, from 1 to 5, 1 being no effect and 5 being severely affected.

**Figure 155**  
**Has your company been affected by IT skills shortages?**



Source: BMI-T, 2009

Almost half said they had not been affected, but this has to be seen in the light of the fact that a number of schools and clinics do not have much access to ICT.

**Table 38**  
**Skills shortage effect by organisation type**

	Schools	Clinics and hospitals	Colleges	Total
No effect	14	6	5	25
Mild effect	3	0	0	3
Moderate effect	1	1	0	2
Strong effect	7	5	2	14
Severely affected	5	2	1	8
Total	30	14	8	52

Source: BMI-T, 2009

When asked in what specific areas the biggest shortages are, a lack of expertise is the problem experienced by most respondents.

Without qualified staff installations, networking, maintenance and repairs become other major issues, with funding and a lack of personnel listed as the main reasons for this.

When asked how government could assist with the IT skills shortage, the following responses were received:

Providing training, training facilities and workshops was the most common response from all respondents. Suggestions included making IT compulsory at school level, offering bursaries for students to study IT at university and offering courses for staff on basic skills, maintenance and upgrading essentials.

Other suggestions included investing in local infrastructure, subsidising independent companies to maintain systems and to offer training to staff members, employing more technicians, appointing specific IT personnel for each region and offering higher salaries to attract more highly skilled IT specialists.

Another issue which was mentioned by a number of respondents was to simply provide facilities with computers.

The government agencies/parastatals/levels of government respondents think could be of assistance are:

Nearly 60% of the respondents said the Department of Education, with other responses including the Department of Labour, the Department of Health, SITA and local government.

## **11. OVERVIEW OF THE PROVINCE OF MPUMALANGA**

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### **Introduction**

To be able to fulfill the overall objective of the project study, which is to develop “value matrices” for IT and telecoms, BMI-T needs to analyse as much background political, demographic, geographic, social and technological information as possible. This extends from a macro level which includes SA ICT to a micro regional and district level. There are great variances between rural and urban situations as well as between different districts in Mpumalanga itself and an in-depth understanding is required to be able to adequately fulfill the objectives of this study. The other important factor to consider is the actual types of industries and economic strategies that are found in Mpumalanga and how best ICT can support the growth of these sectors and initiatives.

### ***Mpumalanga demographics***

Mpumalanga encompasses 76,495km<sup>2</sup> of land, or 6.3% of the country. Its capital is Nelspruit, and the province has a number of major industrial cities, such as Witbank, Middelburg and Secunda, which host some of the important industrial complexes of South Africa. To the west, Mpumalanga enjoys proximity to the Gauteng economic hub. Mineral resources underground include rich veins of coal, gold and iron ore. Agriculture plays a vital part, ranging from the production of maize or tropical fruit, to subsistence farming. Vast forests cover many areas, feeding timber, pulp and paper production. The province also boasts world-renowned game reserves, and is the primary gateway to the Greater Limpopo Transfrontier Park, which stretches over three countries and encompasses the Kruger National Park. Tourism and business are facilitated by an international airport, Kruger Mpumalanga International. The province has boundaries with Mozambique and Swaziland.

A new Mpumalanga brand and image was launched in mid-2008 by the provincial government, giving depth and adding value to Mpumalanga’s product offerings and value proposition beyond being the “land of the rising sun”. The brand content is positioned on four pillars, namely, the province’s history, natural assets, attitude, and capabilities.

The Mpumalanga economy reached R138,732 million in 2007, which was a growth rate of 4.2%, considerably lower than the country's average of 5.2%<sup>1</sup>. The table below provides a statistical snapshot of the province.

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<sup>1</sup> Statistics detailing GDP per province are only released once a year by StatsSA, usually as part of the third quarter GDP statistical release. Regional GDP figures in this report are therefore the most recent, for the calendar year 2007.

**Table 39  
Mpumalanga Statistics**

Segment	Indicator
Population (2008)	3,589,909
% of total	7.4%
Population density (per km <sup>2</sup> )	50%
Area (km <sup>2</sup> )	79,490
% of total	6.3%
Current GDP-R (2007)	R138,732m
% of total GDP	6.9%
GDP per capita (2007)	R 38,645
Average monthly income per household (2008)	4546.83
Average monthly personal income (2008)	R1721.00
Economically active population (2008)	1.20m
% of SA economically active population	6.8%
Absorption rate (% of working age population who are employed)	42.2%
Unemployment rate (2008)	23.2%

Source: BMI-T 2009, StatsSA 2009, AMPs 2008

Overall gross domestic product per region (GDP-R) for Mpumalanga is expected to be driven by higher levels of fixed investment associated with large infrastructure investment programmes. The mining sector in particular, has witnessed a higher level of infrastructural investment. Global demand for steel has been growing at a rate of 6% per annum and this means greater activity for the province's steel industry, and a substantial expansion of stainless steel manufacturing capacity to meet increased demand. Mpumalanga's importance as a producer of electricity, and coal to fuel electricity production, means that energy and mining expansion projects are underway as part of the plan to meet the country's energy shortage.

The Nelspruit/Mbombela area will play a vital part as one of the hosts for the soccer world cup in 2010, and considerable infrastructure expenditure is being undertaken on a variety of fronts to ensure the success of this event.

The Maputo Development Corridor, which connects the economies of South Africa and Mozambique, is profoundly changing the Mpumalanga landscape. Some 200 projects are creating the opportunity for development and transformation. All this has the potential to increase production and export in manufacturing, especially stainless steel, automotive components, petrochemicals, food and wood products.

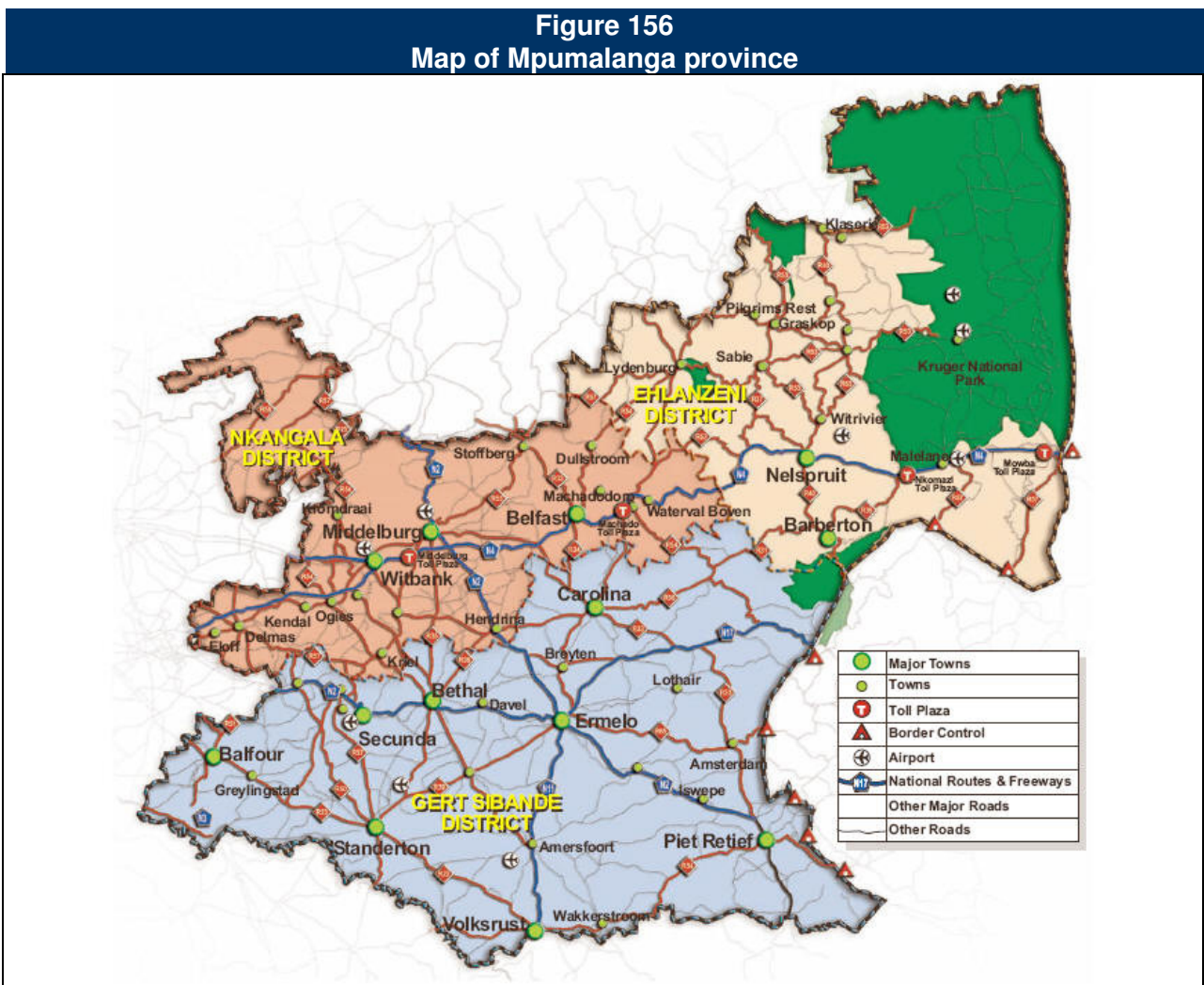
Although the economic future of the province will be affected by the global economic crisis, in terms of reduced demand for resources and products, as well as a decline in tourism, the effect is likely to be muted by the nature of the infrastructural projects mentioned above, which are driven largely by essential demand and government policy and funding.

While investment expenditure may be expected to maintain growth in the economy, household consumption expenditure is likely to decline. According to the MEC Craig

Padayachee<sup>2</sup> 'the growth in private consumption expenditure fuelled by consumer spending declined in 2007 following the national trend due to interest rate hikes as well as the introduction of Financial Intelligence Centre Act (FICA).

Mpumalanga's Consumer Price Index (CPI) for December 2008 stood at 10.7% year on year, which although showing a marginal decline from earlier in 2008, is still a heavy burden on the consumer, and slightly above the national average of 10.3%. CPI in the rural areas of Mpumalanga was 12.0%, compared to 10.0% in the urban areas. Food CPI, which has a massive impact on poorer consumers who have a high proportional expenditure on food, was 16.5% in Mpumalanga for the same period, which is a concern in a province where nearly half of the population has no regular source of income.

The figure below is a map of Mpumalanga and its districts.



Source: [www.maps.yellowpages.co.za](http://www.maps.yellowpages.co.za) 2009

<sup>2</sup> 2008/09 Policy and Budget Vote Speech for Mpumalanga Department of Economic Development and Planning by the Honourable MEC Craig Padayachee, Mpumalanga Legislature, 20 June 2008



## Municipal district overview

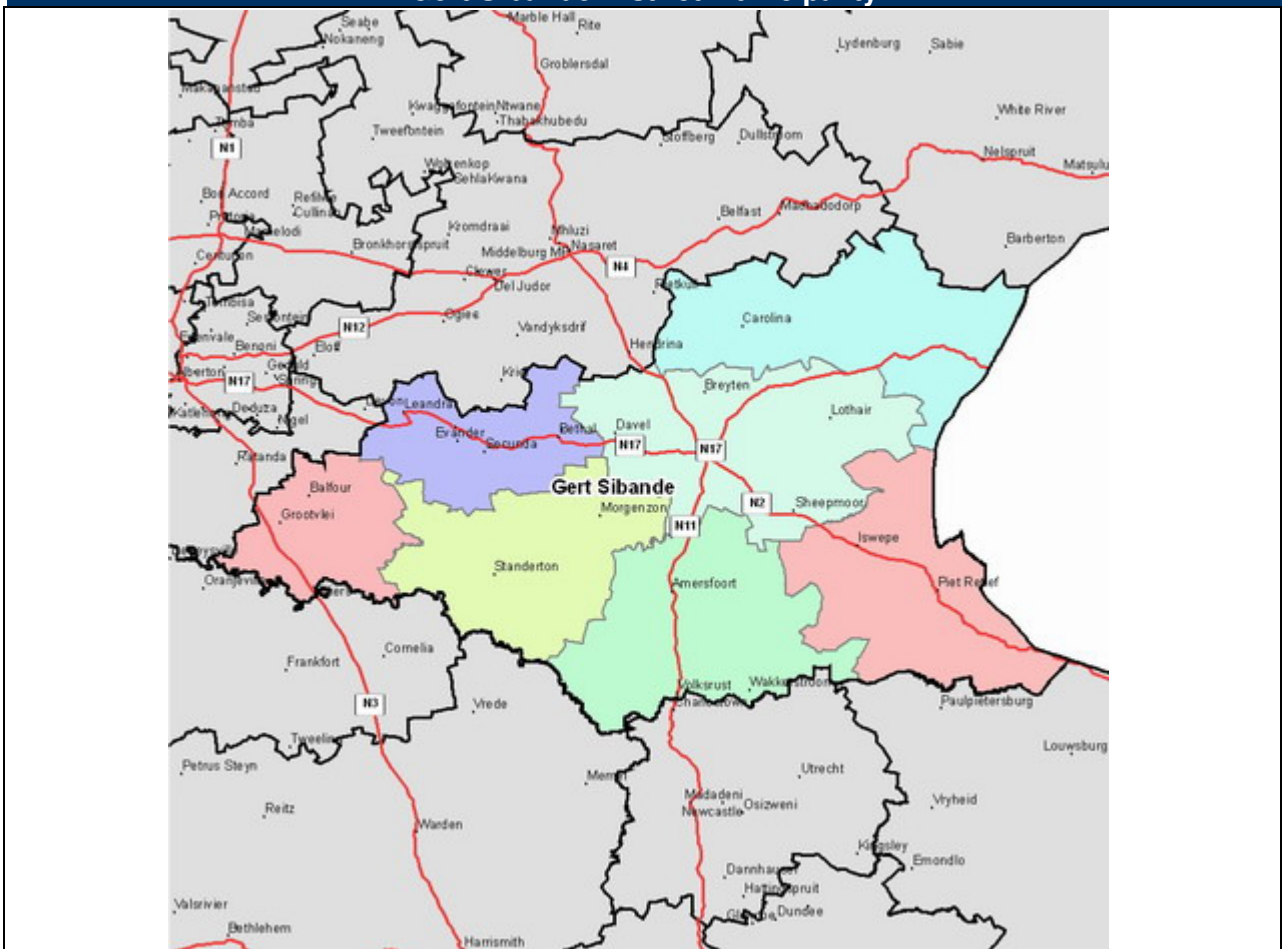
Mpumalanga is divided into three districts: Gert Sibande District Municipality, Nkangala District Municipality and Ehlanzeni District Municipality.

The maps below show the towns and villages within these districts.

### *Gert Sibande District Municipality (DC30)*

This district municipality consists of seven local municipalities: Albert Luthuli (MP 301), Msukaligwa (MP 302), Mkhondo (MP 303), Seme (MP 304), Lekwa (MP 305), Dipaleseng (MP 306), Govan Mbeki (MP 307). It has a border with Swaziland to the east. Secunda is a centre for Sasol's operations, and major trunk roads run through this province from Swaziland and KwaZulu-Natal.

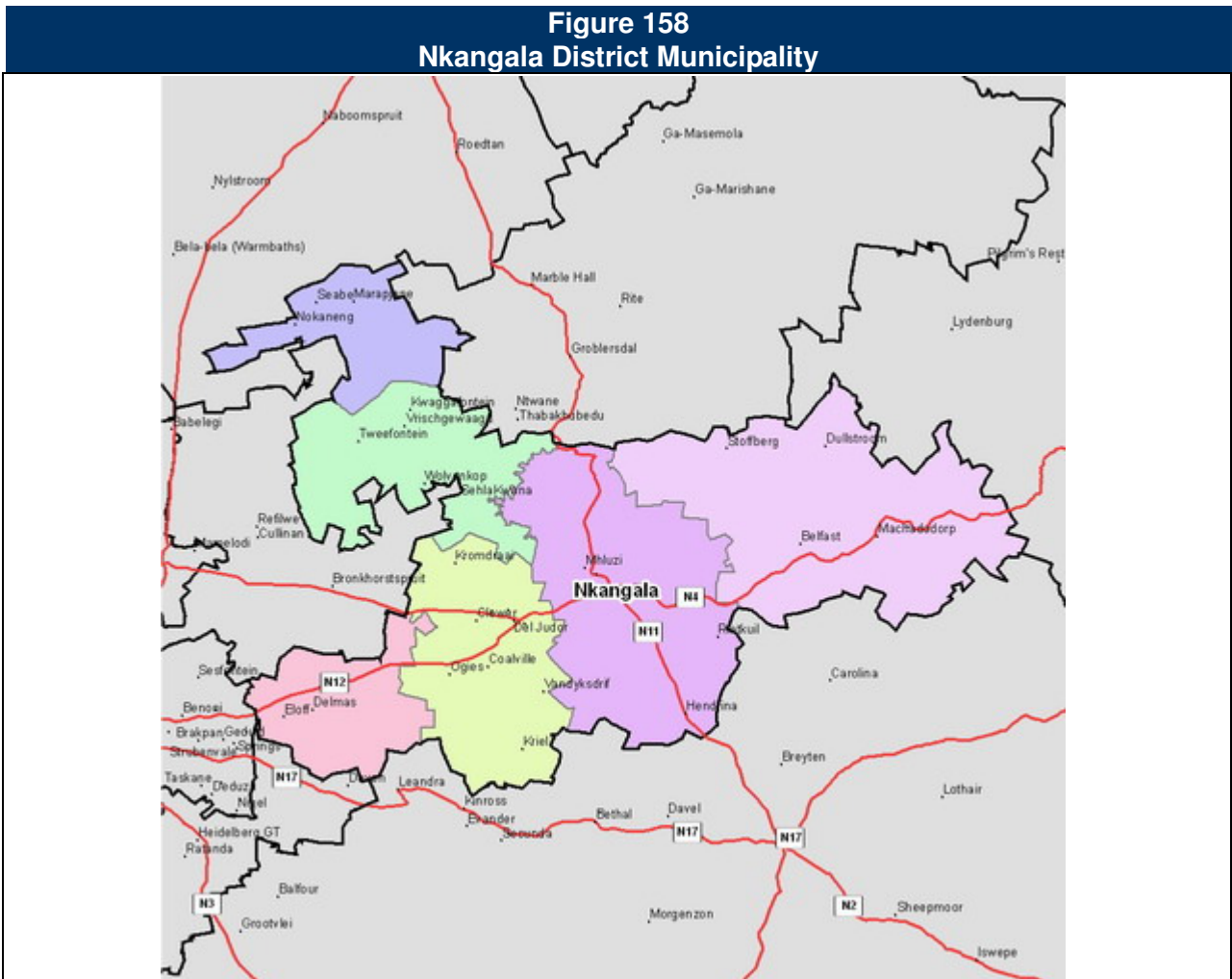
**Figure 157**  
**Gert Sibande District Municipality**



Source: Municipal Demarcation Board (accessed in Feb 2009)

### Nkangala District Municipality (DM31)

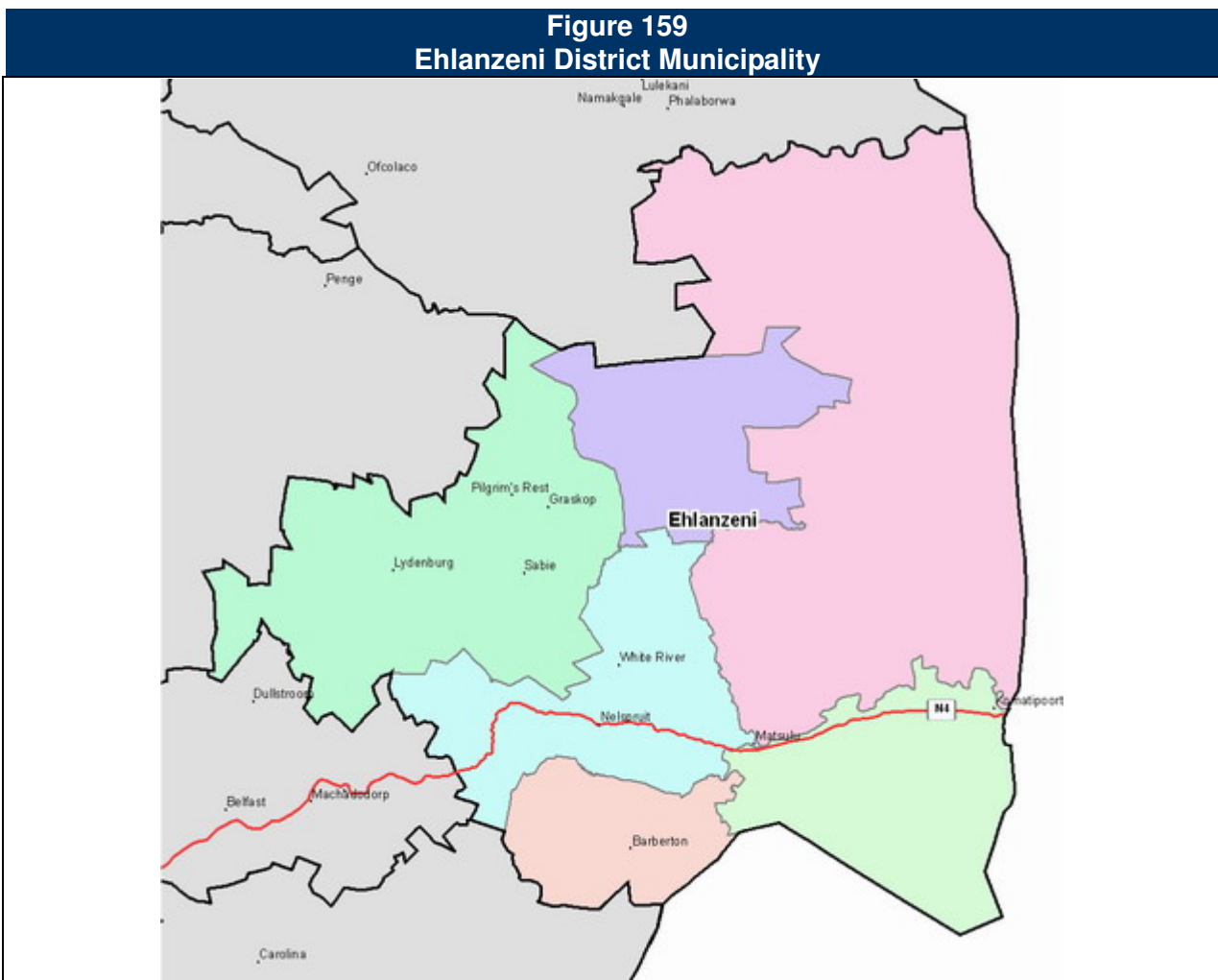
Nkangala consists of six municipalities, Delmas (MP 311), Emalahleni (MP 312), Steve Tshwete (MP 313), Emakhazeni (MP 314), Thembisile (MP 315), and Dr J S Moroka (MP 316). It is the closest to the Gauteng's East Rand. The industrial and mining areas around Middelburg and Witbank are in this province, as is the western part of the Maputo Corridor.



Source: Municipal Demarcation Board (accessed in Feb 2009)

### *Ehlanzeni District Municipality (DM32)*

This province includes the capital city Nelspruit and the Kruger National Park, and shares borders with both Mozambique and Swaziland. It comprises five municipalities, Thaba Chweu, Mbombela, Umjindi, Nkomazi, Bushbuckridge (an ISRD Presidential Node) and the southern part of the Kruger National Park, which is a District Management Area (DMA). The Maputo Corridor runs through this district, joining Mozambique at Komatipoort.



Source: Municipal Demarcation Board (accessed in Feb 2009)

### **Demographics of the residents of Mpumalanga**

The population of Mpumalanga was 3,643,435 according to the StatsSA Community Survey of mid-2007, which indicates a growth of 8.2% since the 2001 Census.

StatsSA's Midyear Population Estimates of July 2008 put the population at 3,589,909 (which does not indicate a decline, but reflects a different method of collecting the statistics).

An overview of the population demographics of the province, showing proportions of race, age and gender, are indicated in the table below. It can be seen that the vast majority are black Africans, particularly in the younger age groups. A third of the Mpumalanga population is under 15 years old, and 45% are under 20 years, while 4.5% are over 65 years old.

**Table 40**  
**Population profile of Mpumalanga, 2007 (proportions of race within each age group, by gender)**

Gender	Age Group (years)	Black African	Coloured	Indian/Asian	White	Total
Male	0 – 4	95.8%	0.8%	0.2%	3.3%	100%
	5-14	95.1%	0.7%	0.3%	3.9%	100%
	15-29	94.0%	0.7%	0.3%	5.0%	100%
	30-64	86.7%	0.9%	0.7%	11.6%	100%
	65+	84.0%	0.3%	0.5%	15.3%	100%
Female	0-4	95.8%	0.8%	0.2%	3.3%	100%
	5-14	95.5%	0.7%	0.2%	3.6%	100%
	15-29	93.5%	0.9%	0.3%	5.4%	100%
	30-64	88.4%	0.8%	0.4%	10.4%	100%
	65+	88.2%	0.8%	0.5%	10.6%	100%
<b>Total</b>		<b>92.0%</b>	<b>0.8%</b>	<b>0.4%</b>	<b>6.8%</b>	<b>100%</b>

Source: StatsSA Community Survey 2007; BMI-T 2009

### ***Distribution of the population in Mpumalanga***

Gert Sibande district is considerably smaller than the other two, in terms of population.

**Table 41  
Population of Mpumalanga, by age group and district council**

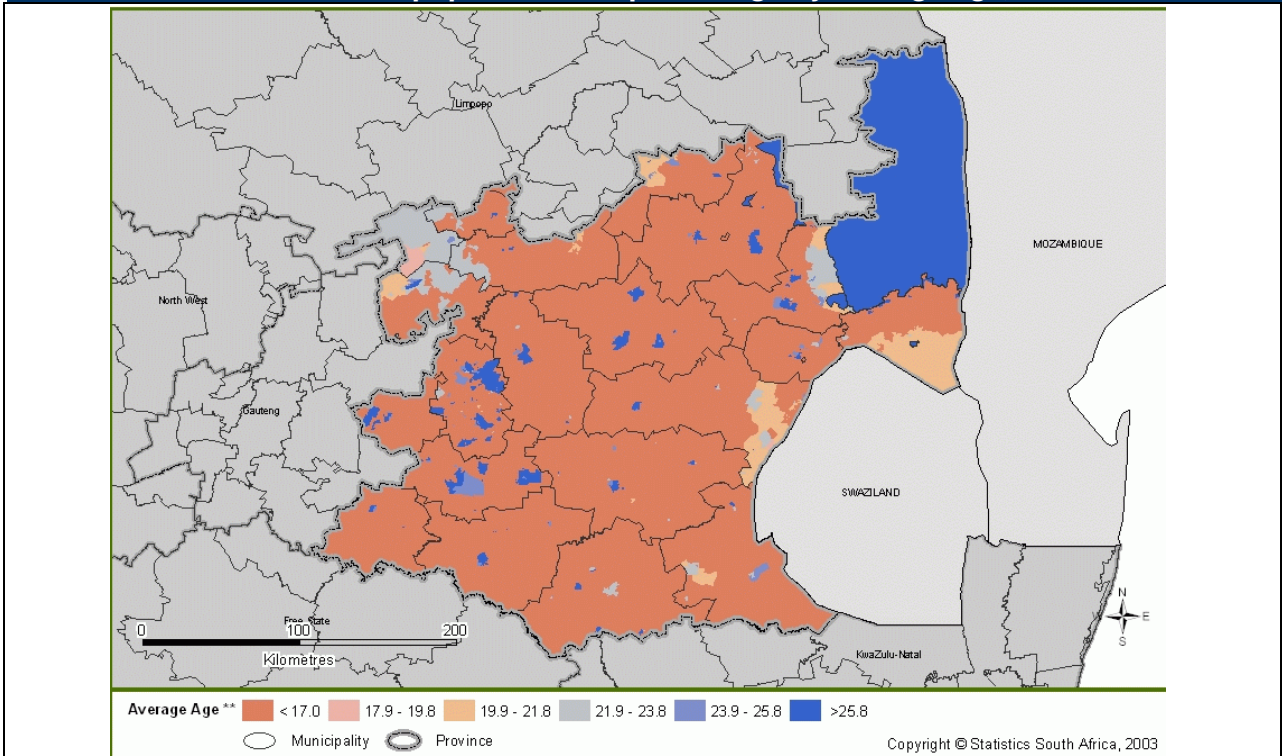
Years	District Council			Province
	Gert Sibande	Nkangala	Ehlanzeni	
0 - 4	101,200	129,145	168,842	399,187
5 - 9	100,788	131,112	182,206	414,106
10 - 14	96,792	121,117	188,433	406,342
15 - 19	97,863	128,692	186,110	412,665
20 - 24	87,407	124,835	156,779	369,021
25 - 29	71,705	106,357	123,901	301,963
30 - 34	65,561	94,362	109,597	269,520
35 - 39	56,250	80,954	92,708	229,912
40 - 44	50,742	72,825	73,109	196,676
45 - 49	47,151	62,986	57,655	167,792
50 - 54	34,383	51,450	49,332	135,165
55 - 59	27,387	38,985	36,614	102,986
60 - 64	16,970	26,981	27,570	71,521
65 - 69	13,749	24,214	26,539	64,502
70 - 74	9,649	12,215	16,912	38,776
75 - 79	6,073	8,928	15,923	30,924
80 - 84	3,467	5,527	5,785	14,779
85 +	3,563	5,813	8,217	17,593
<b>Total</b>	<b>890,700</b>	<b>1,226,498</b>	<b>1,526,232</b>	<b>3,643,430</b>

Source: StatsSA Community Survey 2007; BMI-T, 2009

In every district, children predominate in numbers. The map below, showing the geographical distribution of the Mpumalanga population by average age, reveals the dearth of adults in the rural areas.



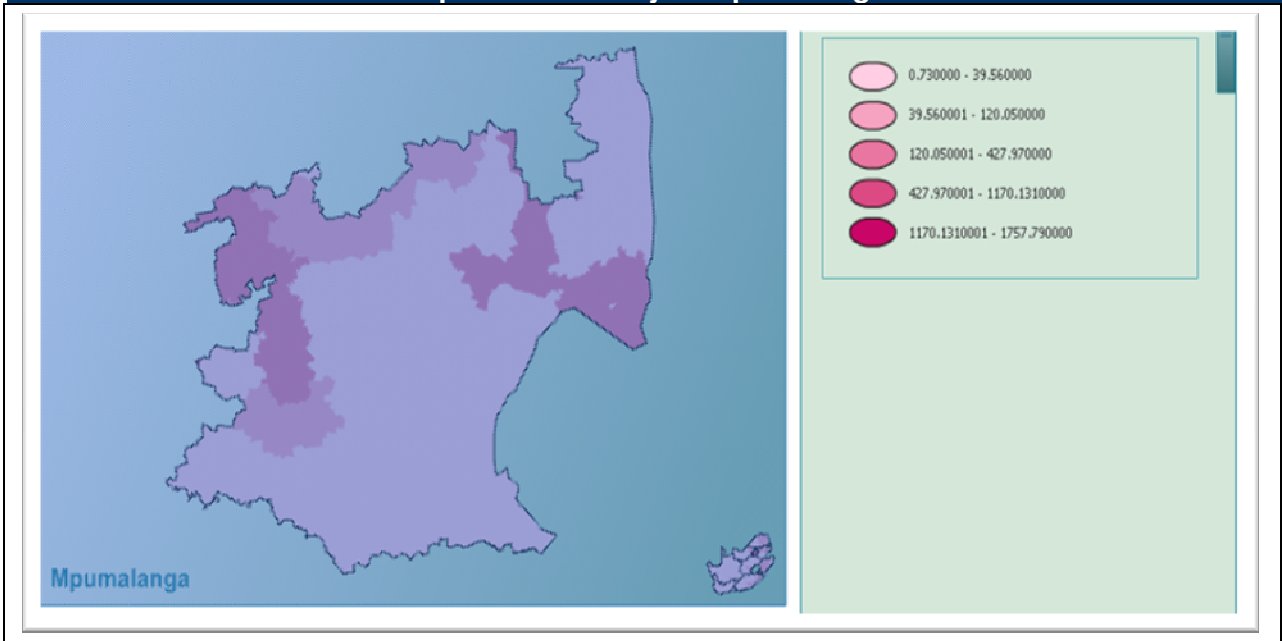
**Figure 160**  
**Distribution of population in Mpumalanga by average age, 2001**



Source: BMI-T 2009, StatsSA 2003 (accessed Feb 2009)

The population density in Mpumalanga is 48.8. In Gert Sibande district municipality it is 30.1, in Nkangala 68.1, and in Ehlanzeni 57.5. The map below illustrates the population density in the province.

**Figure 161**  
**Population density of Mpumalanga**



Source: BMI-T 2009, StatsSA 2001 (accessed Feb 2009)

Very nearly 60% of the population lives in rural areas. The higher density population is mostly closer to the Gauteng area, and around Nelspruit and the Mozambique border.

The table below also shows that 94% of the population is black African in Mpumalanga. Rural and urban population splits are shown in the table below. The majority of whites live in urban areas, while nearly two thirds of the black Africans reside in the rural areas.

<b>Table 42 Mpumalanga population rural/urban split</b>						
	<b>Urban</b>	<b>Rural</b>	<b>Total</b>	<b>% urban</b>	<b>% rural</b>	<b>% total</b>
African	1,240,000	2,062,000	3,302,000	37.6	62.4	100.0
Coloured		1,000	1,000	0.0	100.0	100.0
White	178,000	20,000	198,000	89.9	10.1	100.0
<b>Total</b>	<b>1,428,000</b>	<b>2,085,000</b>	<b>3,513,000</b>	<b>40.6</b>	<b>59.4</b>	<b>100.0</b>

Source: BMI-T 2009, StatsSA Income & Expenditure Survey 2008

### ***Mpumalanga by households***

There are estimated to be between 940,000 and 780,000 households in Mpumalanga.<sup>3</sup>

About 7% of the Mpumalanga population was living in traditional dwellings or huts in 2006, while about 15% of households dwelt in informal housing.

The table below, derived from the 2008 AMPs database, gives a similar percentage breakdown for rural (58%) and urban (42%) to that given by StatsSA in their Income and Expenditure survey (see the table above). AMPs breaks down the number of households into more detailed urban groups, showing that there are very few households in villages in Mpumalanga, while 20% of households are in towns of over 40,000 inhabitants.

<b>Table 43 Households in Mpumalanga</b>		
Community Detailed	number of households	% of total
Cities (100 000 - 249 999)	83,550	10.7
Large Towns (40 000 - 99 999)	71,981	9.3
Small Towns (8 000 - 39 999)	128,330	16.5
Large Villages (4 000 - 7 999)	16,564	2.1
Small Villages (500 - 3 999)	21,415	2.8
Settlements (Less than 500)	3,250	0.4
<b>Total urban</b>	<b>325,091</b>	<b>41.8</b>
<b>Rural</b>	<b>453,047</b>	<b>58.2</b>
<b>Grand Total</b>	<b>778,138</b>	<b>100.0</b>

Source: BMI-T 2009, SAARF's AMPs 2008RA

### ***Household and personal income***

Wages in Mpumalanga are considerably lower than the South African average, which is R6326 per month. StatsSA puts the average monthly household income at R4,546.83, or R54,562 per annum, as can be seen below:

<sup>3</sup> (In 2006, Statistics SA's Household Survey estimated that there were 797,000 households in Mpumalanga. In its Income and Expenditure survey 2005/2006, published in 2008, Stats SA estimated there were 879,707 households. The Community Survey 2007, published by StatsSa in July 2008, gives the number of households as 940,402. SAARF's AMPs 208 rolling average puts the number of households at 778,138.)

**Table 44**  
**Average household income by source of income, Mpumalanga, 2005/06**

	Mpumalanga	South Africa
Household income from	R	R
Salaries and wages	36,068	48,152
Self-employment and business	5,992	7,300
Capital	142	865
Pensions from previous employment/own investment	1,561	1,590
Annuities from own investment	126	363
Old age pensions	1,985	2,033
Disability grants	565	834
Family allowances	1,971	1,605
Workman's compensation	126	85
Individuals (alimony, etc)	728	888
Other income from individuals	303	314
Other	1,087	3,179
Benefits, donations and gifts	09	298
Imputed rent on owned dwellings	3,818	7,081
<b>Total</b>	<b>54,562</b>	<b>74,589</b>

Source: StatsSA Income and expenditure survey, published 2008; BMI-T, 2009

### *Households per LSM in Mpumalanga*

The number of households per LSM and average household income per month is depicted in the table below for the 2006 to 2008 period. The CAGRs of these indicators are also depicted in the table.

The table below uses statistics collected in 2008 by SAARF's AMPs (South African Advertising Research Foundation's All Media Survey), who have been responsible for developing and recording the LSM (Living Standards Measure) data over a period of years. Please note that the AMPs number of households (778,138) differs considerably from that of Statistics SA, who recorded 940,403 households in their 2007 Community Survey, and 797,000 households in their 2006 Household Survey. After queries were raised in the national press in the second week of January 2008, StatsSA issued the following cautionary notice on their 2007 Community Survey webpage, "The distribution of households by province has very little congruence with the General Household Survey or Census 2001".

The majority of households in Mpumalanga fall into LSMs 4 to 6. There has been a substantial increase in the number of households in the LSM 5, 6 and 7 groups, and a correspondingly notable decline in LSMs 1, 2 and 3. Similarly, average household income has increased considerably, except amongst the very disadvantaged LSM1. The profile is that of an increasingly prosperous populace, albeit not a yet a wealthy or privileged one.

**Table 45**  
**Households per LSM statistics in Mpumalanga**

	Number of households ('000)				Average monthly income			
	2006	2007	2008	CAGR (06-08)	2006	2007	2008	CAGR (06-08)
LSM 1	38	27	19	-29.29%	R 1,168.00	R 1,198.00	R 917.57	-11.37%
LSM 2	128	100	49	-38.13%	R 1,421.00	R 1,370.00	R 2,003.89	18.75%



LSM 3	129	110	81	-20.76%	R 1,523.00	R 1,641.00	R 1,861.93	10.57%
LSM 4	155	175	168	4.11%	R 1,932.00	R 2,135.00	R 2,694.12	18.09%
LSM 5	118	153	164	17.89%	R 2,710.00	R 3,267.00	R 3,275.86	9.95%
LSM 6	87	106	142	27.76%	R 4,243.00	R 5,128.00	R 6,159.53	20.49%
LSM 7	6	48	51	191.55%	R 7,172.00	R 9,665.00	R 8,859.43	11.14%
LSM 8	30	29	35	8.01%	R 10,540.00	R 11,629.00	R 12,874.68	10.52%
LSM 9	38	39	44	7.61%	R 12,893.00	R 14,745.00	R 19,102.36	21.72%
LSM 10	23	37	25	4.26%	R 18,201.00	R 20,379.00	R 26,042.39	19.62%
Total	781	825	778	-0.19%	R 3,653.00	R 4,717.00	R 5,587.92	23.68%

Source: BMI-T 2009, AMPs 2008RA

Approximately 12.7% of the province's population is dependent on social grants, just on the national average.

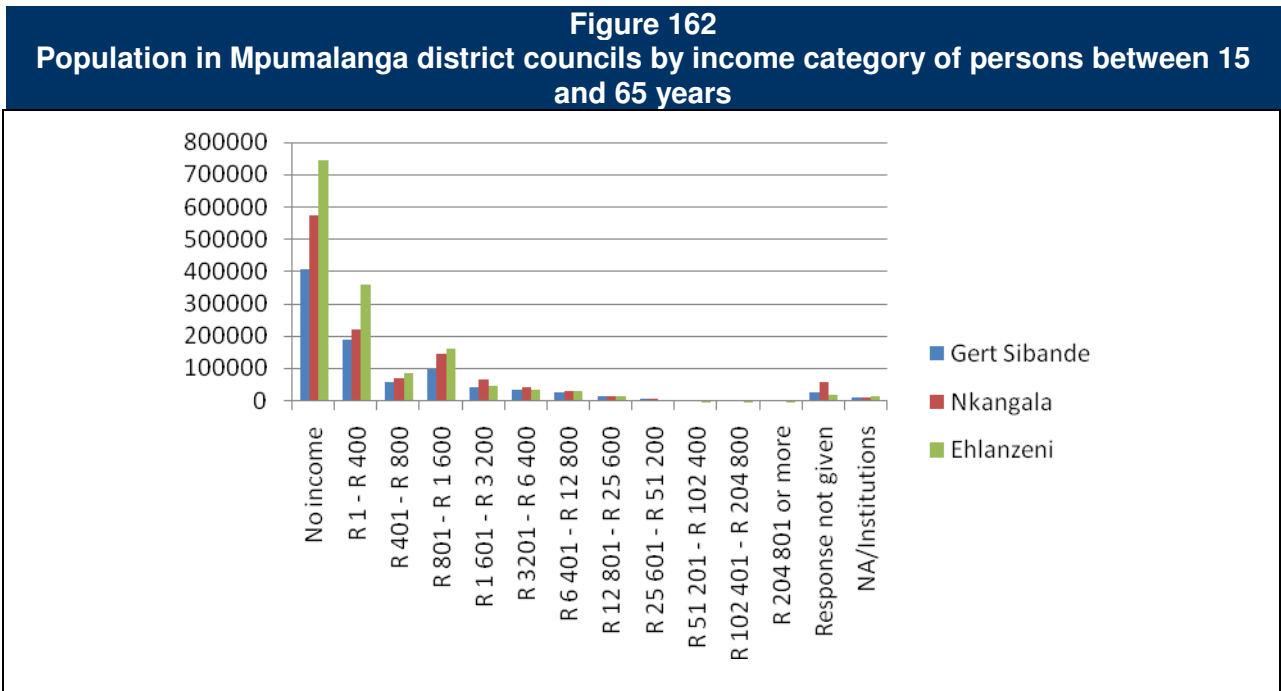
### *Personal income by district council*

Personal income by district council area is shown in the table below. Ehlanzeni is not only the most populous district, but also the poorest, with 72.3% of its adult population having either no income, or an income below R400.

<b>Table 46 Population in Mpumalanga district councils by income category of persons between 15 and 65 years</b>				
	District council			Mpumalanga total
	Gert Sibande	Nkangala	Ehlanzeni	
No income	405,442	573,090	742,954	1,721,486
R1 - R400	185,793	218,323	360,246	764,362
R401 - R800	54,439	66,507	87,627	208,573
R801 - R1,600	94,564	143,937	160,878	399,379
R1,601 - R3,200	42,092	65,836	49,307	157,235
R3,201 - R6,400	32,998	42,184	36,337	111,519
R6,401 - R12,800	23,791	28,811	31,444	84,046
R12,801 - R25,600	11,845	14,560	14,267	40,672
R25,601 - R51,200	3,379	4,855	4,088	12,322
R51,201 - R102,400	1,149	1,073	1,044	3,266
R102,401 - R204,800	363	923	591	1,877
R204,801 or more	459	847	67	1,373
Response not given	24,289	57,477	21,108	102,874
NA/Institutions	10,093	8,077	16,279	34,449
Total	890,696	1,226,50	1,526,237	3,643,433

Source: StatsSA Community Survey, 2007; BMI-T, 2009

The poverty levels in the province are dramatically illustrated in the graph below.



Source: StatsSA Community Survey 2007

In the Gert Sibande DM, approximately 61.7% of the population, or over half a million persons, are living below the minimum living standard (GSDM IDP 2998/09). Within the district municipality, there is a concentration of economic activity in the Govan Mbeki local municipality, within which almost half of the district’s household income is generated.

### HDI for the three district municipalities

The HDI for Gert Sibande District Municipality is 0.55, which, being above 0.50, indicates a moderate level of development within the District. In Nkangala the HDI rises to 0.58 but in Ehlanzeni it is down to 0.51.

### *Consumption expenditure in Mpumalanga*

Consumption expenditure in Mpumalanga households is focused chiefly on the necessities of life, in keeping with the trend in South Africa. However, transport spend is above average, as are food and beverage spend. Households in Mpumalanga spend a higher proportion on transport than those in any other province.

Mpumalanga has the lowest average spend on housing, water, electricity, etc, in the country by a fair margin (with North West being the next cheapest at 19.8% and Western Cape the most expensive at 28.6%). Expenditure on health in Mpumalanga is one of the lowest in the country.

**Table 47**  
**Expenditure in Mpumalanga, 2005/06**

Percentage distribution of annual household consumption expenditure by main expenditure group and province		
	Mpumalanga	South Africa
Number of households in sample	1,687	21,144
Number of households in population	879,707	12,457,580
<b>Main expenditure group</b>	<b>%</b>	<b>%</b>
Food and non-alcoholic beverages	16.3	14.4
Alcoholic beverages and tobacco	1.0	1.2
Clothing and footwear	5.6	5.0
Housing, water, electricity, gas and other fuels	17.6	23.6
Furnishings, household equipment & routine maintenance of dwelling	9.2	6.9
Health	1.4	1.7
Transport	21.7	19.9
Communication	3.4	3.5
Telephone and telefax equipment	0.6	0.4
Telephone and telefax services	2.6	3.0
Recreation and culture	4.3	4.6
Audio-visual, photographic and information processing equipment	1.9	1.5
Education	2.4	2.4
Restaurants and hotels	1.7	2.2
Miscellaneous goods and services	15.4	14.4
Other unclassified expenses	0.1	0.3
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

Source: StatsSA Income and expenditure survey, 2008; BMI-T, 2009

The average household rand expenditure on major items in Mpumalanga is shown below:

<b>Table 48</b>		
<b>Average expenditure in Mpumalanga 2005/06</b>		
<b>Average household consumption expenditure by main expenditure group and province</b>		
	<b>Mpumalanga</b>	<b>South Africa</b>
Number of households in sample	1,687	21,144
Number of households in population	879,707	12,457,580
<b>Main expenditure group</b>	<b>rand per household per year</b>	
Food and non-alcoholic beverages	7,019	8,105
Alcoholic beverages and tobacco	408	647
Clothing and footwear	2,427	2,781
Housing, water, electricity, gas and other fuels	7,573	13,245
Furnishings, household equipment & routine maintenance of dwelling	3,950	3,868
Health	610	933
Transport	9,325	11,180
Communication	1,441	1,969
Telephone and telefax equipment	278	235
Telephone and telefax services	1134	1702
Recreation and culture	1,849	2,582
Information processing equipment	205	237
Education	1,019	1,356
Restaurants and hotels	727	1,232
Miscellaneous goods and services	6,623	8,081
Other unclassified expenses	55	172
<b>Total</b>	<b>43,026</b>	<b>56,152</b>

Source: StatsSA Income & expenditure survey, 2008; BMI-T, 2009

### Ownership of assets

An image of both the poverty and the rural lifestyle of the average Mpumalangan can be deduced from the ownership of asset information, by comparison with South Africa as a whole. It is notable that ownership of means of transport (car/motorcycle, and even bicycle) is considerably below the national average. Cellular phones are common, but landlines way below average and other signs of the digital adoption are well below the national average.

<b>Table 49 Ownership of assets</b>		
	<b>Mpumalanga</b>	<b>South Africa</b>
<b>Number of households in sample</b>	1,687	21,144
<b>Number of households in population</b>	879,707	12,457,580
<b>Own or have access to</b>	<b>Percentage of total in each column</b>	
Radio	78.9	75.0
Stereo HiFi	38.1	41.6
Tape recorder	40.4	35.3
Television	63.5	66.6
Video cassette recorder/DVD	28.8	35.6
Refrigerator/freezer	64.1	63.7
Stove, gas or electric	74.6	78.6
Microwave	24.2	32.6
Washing machine	20.5	26.1
Motor vehicle	10.0	17.8
Motorcycle/scooter	0.9	1.9
Sewing/knitting machine	11.4	11.2
Donkey cart/ox cart	1.1	1.1
Plough	4.4	5.5
Tractor	1.9	1.4
Wheelbarrow	51.2	33.8
Grinding mill	2.5	2.5
Bicycle	14.6	16.2
Computer	10.1	14.7
Canoe/boat	0.8	1.1
Motorboat	0.3	0.7
Camera	16.0	19.1
Bed	98.1	97.6
Cellular telephone	74.0	70.4
Landline telephone	11.6	22.0
Satellite dish	3.1	5.7
Internet service	4.6	6.5

NOTE: Due to rounding, figures do not necessarily add up to totals.  
Source: StatsSA Income & expenditure survey, 2008; BMI-T, 2009

### Labour and employment in Mpumalanga

The potential labour force in Mpumalanga is approximately 1.2 million, or 6.7% of the economically active population in the country. The unemployment rate is 23.2%, and has been stable but declining marginally from a high of 30.8% in 2003. The labour absorption rate is 4.9%, exactly on the national average.

### Employment in the province

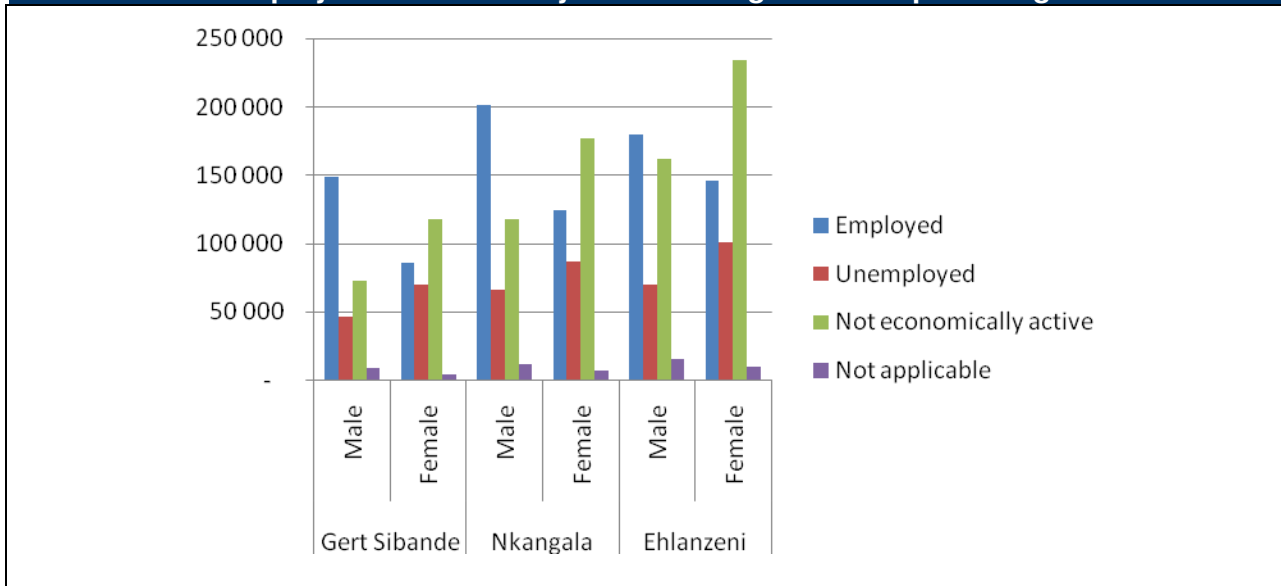
The table below gives some outline of the structure of the labour and employment structure in Mpumalanga:

<b>Table 50 Labour and employment in Mpumalanga, 2008</b>		
	<b>000s</b>	
<b>Total population in Mpumalanga</b>	3,643	
	<b>000s</b>	<b>% of total SA employment</b>
<b>Employment in Mpumalanga</b>		
Total employment	924	6.8
Formal sector (non-agricultural)	547	5.8
Informal sector (non-agricultural)	207	9.5
Agriculture	82	10.7
Private households	87	6.8
	<b>000s</b>	<b>% of total SA</b>
<b>Labour market status in Mpumalanga</b>		
Population of working age (15 - 64 yrs)	2,188	7.1
Labour force	1,202	6.8
Employed	924	6.8
Unemployed	279	6.8
Not economically active	985	7.6
	<b>000s</b>	
<b>Involvement in non-market activities</b>		
Subsistence farming	102	
Fetching water or collecting wood/dung	243	
Produce other goods for household use	14	
Construction or major repairs to own or household	22	
	<b>%</b>	<b>comparison with total SA</b>
<b>Ratios in Mpumalanga</b>		
Unemployment rate	23.2	23.2
Employed / population ratio	42.2	44.3
Labour force participation rate	55.0	57.7

Source: StatsSA Labour Force Survey 2008

The figure below shows the employment levels by district and gender, revealing that Ehlanzeni has high levels of unemployment and a high proportion of non-economically active adults.

**Figure 163**  
**Employment of adults by district and gender in Mpumalanga**



Source: StatsSA Community Survey 2007

Employment by industry sectors within the districts of Mpumalanga is shown in the table below. It can be seen that employment in the mines and utilities sectors is concentrated in the Nkangala district, while manufacturing, finance and wholesale sectors are stronger in Ehlanzeni. Gert Sibande, although having a smaller working population, also has fewer opportunities, with the trade sector being the chief employer, after 'unspecified', which might be taken to imply high employment in the informal sector.

**Table 51**  
**Adults employment in industry sectors by districts in Mpumalanga**

	District council			Mpumalanga total
	Gert Sibande	Nkangala	Ehlanzeni	
Agriculture; hunting; forestry and fishing	11,992	13,301	29,094	54,387
Mining and quarrying	14,297	28,528	8,099	50,924
Manufacturing	16,434	36,386	47,040	99,860
Electricity; gas and water supply	1,673	7,003	2,497	11,173
Construction	7,794	21,877	19,416	49,087
Wholesale and retail trade	29,009	29,185	39,449	97,643
Transport; storage and communications	5,456	11,053	11,461	27,970
Financial; insurance; real estate and business services	9,836	26,381	34,853	71,070
Community; social and personal services	18,671	36,359	54,226	109,256
Other and not adequately defined	15,799	44,403	42,849	103,051
Unspecified	104,387	71,413	36,284	212,084
Not applicable	314,231	461,837	579,908	1,355,976

Source: StatsSA Community Survey, 2007, as adjusted in March 2009; BMI-T 2009

Mpumalanga has a fairly high proportion of skilled, professional and managerial workers, although the 'elementary' category is the largest.

**Table 52**  
**Adults occupation by districts in Mpumalanga**

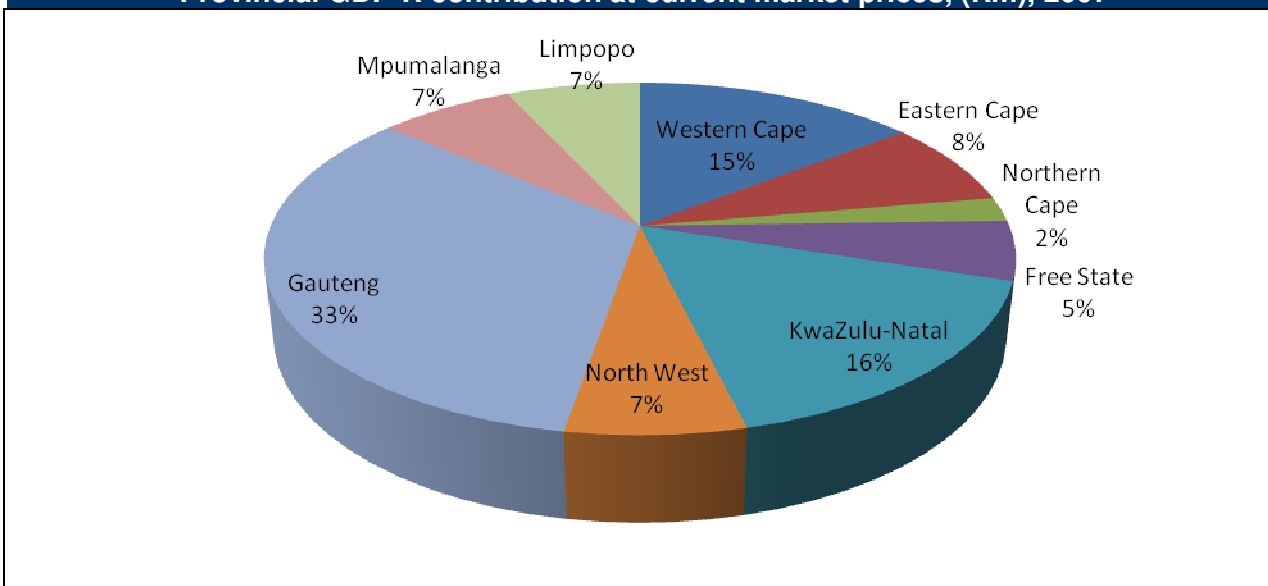
	District council			Mpumalanga total
	Gert Sibande	Nkangala	Ehlanzeni	
Legislators; senior officials and managers	10,449	19,762	25,979	56,190
Professionals	14,128	25,375	33,374	72,877
Technicians and associate professionals	7,439	12,887	17,003	37,329
Clerks	8,785	18,841	20,824	48,450
Service workers; shop and market sales workers	12,965	22,658	31,951	67,574
Skilled agricultural and fishery workers	8,023	9,632	18,812	36,467
Craft and related trades workers	23,428	50,361	44,680	118,469
Plant and machine operators and assemblers	14,788	28,158	23,609	66,555
Elementary occupations	31,288	61,059	65,016	157,363
Occupations unspecified and not elsewhere classified	104,054	77,153	44,022	225,229
Not applicable (not economically active)	322,273	468,451	593,719	1,384,443

Source: StatsSA Community Survey, 2007; BMI-T 2009

### **GDP by province**

The GDP for South Africa (at current market prices) has grown from R742bn in 1998 to R1,999bn in 2007 at a CAGR of 4.03% over the ten years, (at 2000 prices). The figure below illustrates the contribution by province.<sup>4</sup>7% of the GDP comes from Mpumalanga.

**Figure 164**  
**Provincial GDP-R contribution at current market prices, (Rm), 2007**



Source: Stats SA, 2009, BMI-T 2009

<sup>4</sup> Statistics detailing GDP per province are only released once a year by StatsSA. Regional GDP figures in this report are therefore the most recent, for the year 2007.



The table below illustrates the GDP growth per province from 1998 to 2007, as well as the change in provincial contribution to GDP.

**Table 53**  
**GDP–R by province at current market prices (Rm)**

Province	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	CAGR '98-'07
Gauteng	250,999	273,163	311,992	337,479	392,499	424,547	470,466	518,842	585,525	668,926	4.6%
KwaZulu-Natal	123,882	132,784	150,910	168,411	191,339	207,346	230,391	251,756	283,236	324,216	4.0%
Western Cape	104,906	116,270	130,983	144,586	164,925	181,970	202,993	225,577	252,797	290,607	4.8%
Eastern Cape	60,985	66,853	75,418	82,412	90,900	100,879	111,428	122,216	136,503	155,520	3.6%
Mpumalanga	51,292	56,970	62,901	73,088	83,017	86,496	93,550	104,336	120,544	138,732	3.3%
North West	46,844	51,426	59,898	67,533	76,685	79,204	87,330	99,154	113,358	129,872	2.9%
Free State	41,168	45,536	49,650	54,690	65,562	68,707	75,978	84,298	94,919	108,892	3.0%
Limpopo	46,434	51,756	58,954	68,297	78,155	83,639	93,029	104,720	119,824	138,163	3.6%
Northern Cape	15,914	18,925	21,443	23,510	25,617	27,905	30,203	33,076	38,514	44,159	2.4%
Total GDP	742,424	813,684	922,148	1,020,008	1,168,699	1,260,693	1,395,369	1,543,975	1,745,219	1,999,086	4.0%
Percentage contribution											
Gauteng	33.8	33.6	33.8	33.1	33.6	33.7	33.7	33.6	33.6	33.5	
KwaZulu-Natal	16.7	16.3	16.4	16.5	16.4	16.4	16.5	16.3	16.2	16.2	
Western Cape	14.1	14.3	14.2	14.2	14.1	14.4	14.5	14.6	14.5	14.5	
Eastern Cape	8.2	8.2	8.2	8.1	7.8	8.0	8.0	7.9	7.8	7.8	
Mpumalanga	6.9	7.0	6.8	7.2	7.1	6.9	6.7	6.8	6.9	6.9	
North West	6.3	6.3	6.5	6.6	6.6	6.3	6.3	6.4	6.5	6.5	
Free State	5.5	5.6	5.4	5.4	5.6	5.4	5.4	5.5	5.4	5.4	
Limpopo	6.3	6.4	6.4	6.7	6.7	6.6	6.7	6.8	6.9	6.9	
Northern Cape	2.1	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.2	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Source: BMI-T 2009, StatsSA, 2009

## The Mpumalanga economy

In addition to its capital, Nelspruit, in Ehlanzeni district, Mpumalanga has a number of major industrial cities, namely Witbank and Middelburg (in Nkangala district) and Secunda (in Gert Sibande district) which host some of the major industrial complexes of South Africa.

Manufacturing is the largest economic sector in the province. South Africa's biggest power stations are situated in Mpumalanga, as are the petroleum-from-coal installation in Secunda and a large paper mill. Mpumalanga's forests, which provide a large part of South Africa's timber requirements, form the backdrop to many eco-tourism opportunities.

Growing export opportunities have contributed to a boom in the agricultural sectors of sub-tropical and citrus fruits, sugar and tobacco.

The Maputo Development Corridor, which connects the economies of South Africa and Mozambique, is profoundly changing the Mpumalanga landscape. Some 200 projects are creating the opportunity for development and transformation. All this has the potential to increase production and export in manufacturing, especially stainless steel, automotive components, petrochemicals, food and wood products.

The relative contribution of sectors to the Mpumalanga economy is shown in the table below, which includes an historical perspective over five years.

	2003 (%)	2004 (%)	2005 (%)	2006 (%)	2007 (%)
Primary industries	23.0	21.8	22.3	23.8	24.4
Agriculture; forestry and fishing	4.7	3.9	3.4	3.6	3.9
Mining and quarrying	18.3	17.9	18.9	20.3	20.5
Secondary industries	25.3	24.7	24.6	23.9	24.0
Manufacturing	19.0	18.7	18.2	17.6	17.5
Electricity; gas and water	4.8	4.6	4.7	4.5	4.4
Construction	1.5	1.4	1.7	1.8	2.1
Tertiary industries	42.5	43.1	42.3	41.3	40.4
Wholesale & retail trade; hotels & restaurants	9.9	9.3	9.2	9.5	9.0
Transport; storage and communication	8.3	8.1	8.0	7.5	7.0
Finance; real estate and business services	10.5	11.5	11.2	11.0	11.2
Personal services	4.9	5.0	4.8	4.6	4.6
General government services	8.9	9.2	9.1	8.8	8.7
All industries at basic prices	90.7	89.7	89.1	89.0	88.8
Taxes less subsidies on products	9.3	10.3	10.9	11.0	11.2
GDRP at market prices	100.0	100.0	100.0	100.0	100.0

Source: StatsSA Feb 2009; BMI-T 2009

### ***The top sectors in Mpumalanga***

The province's chief contributors to economic activity are currently mining, manufacturing, and financial services, and to a lesser extent, retail and wholesale trade (which incorporates elements of tourism), government and transport & communications.

If one looks at the country as a whole, the contribution of Mpumalanga to the total production of South Africa in the sectors of electricity, mining, agriculture and forestry is considerable. No less than 41% of the electricity, gas and water production in South Africa originates in Mpumalanga.

The table below provides a detailed view of the current gross domestic product per industry sector in Mpumalanga.

<b>Table 55</b>	
<b>Gross domestic regional product for Mpumalanga by sector, 2007, current prices (Rm)</b>	
<b>Industry</b>	<b>2007</b>
<b>Primary industries</b>	<b>33,897</b>
Agriculture; forestry and fishing	5,454
Mining and quarrying	28,442
<b>Secondary industries</b>	<b>33,251</b>
Manufacturing	24,319
Electricity; gas and water	6,078
Construction	2,855
<b>Tertiary industries</b>	<b>56,099</b>
Wholesale & retail trade; hotels & restaurants	12,500
Transport; storage and communication	9,693
Finance; real estate and business services	15,571
Personal services	6,322
General government services	12,014
<b>All industries at basic prices</b>	<b>123,247</b>
Taxes less subsidies on products	15,485
<b>GDPR at market prices</b>	<b>138,732</b>

Source: StatsSA February 2009; BMI-T 2009

The relative contribution of sectors to the Mpumalanga economy is shown in the table below, which includes an historical perspective over five years.

**Table 56**  
**Contribution of industry sectors to GDP in Mpumalanga, 2003-2007,**  
**(percentages, based on current rand values)**

	2003 (%)	2004 (%)	2005 (%)	2006 (%)	2007 (%)
<b>Primary industries</b>	23.0	21.8	22.3	23.8	24.4
Agriculture; forestry and fishing	4.7	3.9	3.4	3.6	3.9
Mining and quarrying	18.3	17.9	18.9	20.3	20.5
<b>Secondary industries</b>	<b>25.3</b>	<b>24.7</b>	<b>24.6</b>	<b>23.9</b>	<b>24.0</b>
Manufacturing	19.0	18.7	18.2	17.6	17.5
Electricity; gas and water	4.8	4.6	4.7	4.5	4.4
Construction	1.5	1.4	1.7	1.8	2.1
<b>Tertiary industries</b>	<b>42.5</b>	<b>43.1</b>	<b>42.3</b>	<b>41.3</b>	<b>40.4</b>
Wholesale & retail trade; hotels & restaurants	9.9	9.3	9.2	9.5	9.0
Transport; storage and communication	8.3	8.1	8.0	7.5	7.0
Finance; real estate and business services	10.5	11.5	11.2	11.0	11.2
Personal services	4.9	5.0	4.8	4.6	4.6
<b>General government services</b>	<b>8.9</b>	<b>9.2</b>	<b>9.1</b>	<b>8.8</b>	<b>8.7</b>
All industries at basic prices	90.7	89.7	89.1	89.0	88.8
Taxes less subsidies on products	9.3	10.3	10.9	11.0	11.2
<b>GDP at market prices</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: StatsSA February 2009, BMI-T 2009

The importance of mining, with a contribution averaging just under 20% over the period, is clearly illustrated by the table above. The other major sector in Mpumalanga is manufacturing, at around 18% of GDP for the past five years. Together, these two sectors contributed about 38% to GDP in 2007.

Analysing the real GDP figures (i.e. with inflation's impact removed), the vagaries of sectoral growth over the years can be seen in the table below. Average growth (CAGR) of each sector over the eight year period is also shown below:

**Table 57**  
**Annual growth in sectoral GDP in Mpumalanga, 1999-2007 (annual percentage growth,**  
**based on real domestic regional product, constant 2000 prices)**

Industry	1999 (%)	2000 (%)	2001 (%)	2002 (%)	2003 (%)	2004 (%)	2005 (%)	2006 (%)	2007 (%)	CAGR (99-07)
<b>Primary industries</b>	4.5	3.1	-2.4	1.6	2.3	2.3	3.9	-1.2	0.8	1.28%
Agriculture; forestry and fishing	12.0	4.5	-	19.9	-4.1	1.8	6.1	-8.7	2.2	0.40%
Mining and quarrying	2.9	2.7	0.3	-1.9	3.8	2.4	3.5	0.5	0.5	1.46%
<b>Secondary industries</b>	<b>-0.4</b>	<b>6.4</b>	<b>1.7</b>	<b>5.0</b>	<b>0.4</b>	<b>4.2</b>	<b>3.1</b>	<b>4.9</b>	<b>5.6</b>	<b>3.91%</b>
Manufacturing	2.1	9.4	3.0	4.9	-0.7	4.6	3.1	4.5	4.9	4.17%
Electricity; gas and water	-7.7	8.6	-6.3	4.8	3.2	1.7	0.8	3.8	3.2	2.39%
Construction	-0.4	-	15.2	7.0	3.6	7.8	9.1	12.0	17.6	5.24%

<b>Tertiary industries</b>	<b>4.6</b>	<b>2.0</b>	<b>3.0</b>	<b>2.3</b>	<b>4.4</b>	<b>4.9</b>	<b>4.9</b>	<b>6.2</b>	<b>5.0</b>	<b>4.08%</b>
Wholesale & retail trade; hotels & restaurants	7.5	5.9	2.9	2.1	2.4	5.4	6.0	7.6	4.8	4.60%
Transport; storage and communication	6.7	5.6	3.9	6.7	9.8	4.0	5.6	6.5	5.7	5.95%
Finance; real estate and business services	4.0	-5.9	6.0	1.6	3.8	9.3	5.5	7.1	6.4	4.13%
Community; social and other personal services	3.8	4.8	2.2	2.4	3.9	1.8	4.3	5.5	3.9	3.59%
General government services	1.2	1.8	-0.4	-0.4	2.8	2.1	2.4	3.6	3.5	1.91%
All industries at basic prices	3.2	3.4	1.2	2.9	2.7	4.1	4.2	4.1	4.2	3.34%
Taxes less subsidies on products	-0.1	0.0	1.8	-1.2	2.1	4.2	5.0	7.3	4.8	2.98%
<b>GDPR at market prices</b>	<b>2.9</b>	<b>3.1</b>	<b>1.3</b>	<b>2.5</b>	<b>2.7</b>	<b>4.1</b>	<b>4.2</b>	<b>4.4</b>	<b>4.2</b>	<b>3.31%</b>

Source: StatsSA, 2007; BMI-T 2007

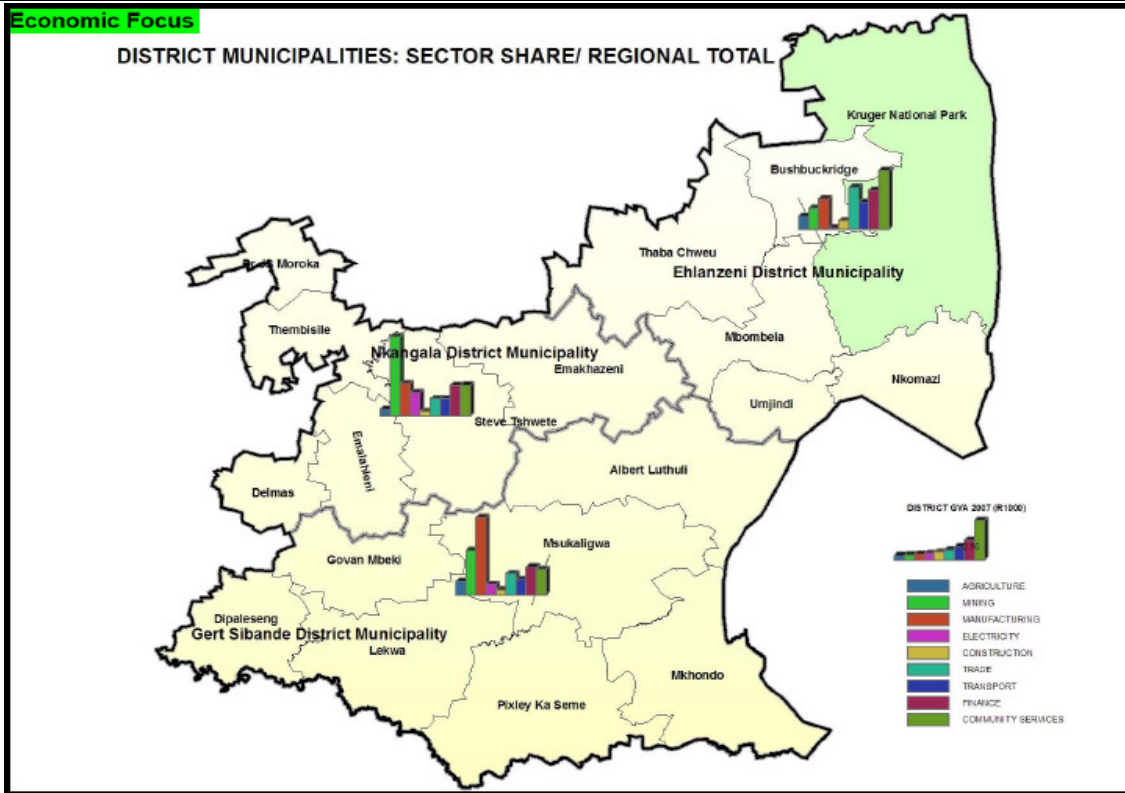
Growth in GDP has been marginally but steadily increasing each year since 2001. The tertiary industries as a group have shown more stability year by year, than the secondary and primary industries. Transport & communications has been the strongest sector in Mpumalanga in terms of sustained growth over the eight-year period (6.0%), with trade (4.6%), construction (5.2%), finance (4.1%) and manufacturing (4.2%) all averaging good growth, despite some erratic years.

Nationally, the province has a substantial share in mining production (19.2%), electricity, gas and water production (14.9%) and agriculture and forestry production (9.6%). Even its share of 7.5% in the manufacturing sector is significant while its share in certain manufacturing subsectors such as timber and wood products (32%), basic iron and steel (23%), chemicals (22%) and paper and pulp (12%) is particularly important.

### ***Districts' share of economic activity***

The map below illustrates clearly the distribution of sectors of economic activity between the three districts within Mpumalanga, with mining predominating in the Nkangala district, manufacturing being concentrated in the southern district of Gert Sibande, while tourism, although not shown in the bar graphs because it is not measured separately by Statistics SA, is obviously a focus of the Ehlanzeni district, as can be seen by the green area indicating nature reserves.

**Figure 165**  
**Mpumalanga district municipalities' share of industrial sector activity**



Source: Mpumalanga Economic Profile Volume 3, July 2008; Department of economic development and planning; Mpumalanga Provincial Government

Gert Sibande District Municipality's economy is predominantly based on mining of coal and gold, forestry and farming (cattle & sheep breeding and maize production). The District hosts one of the largest petro-chemical industries in the country (Sasol) and four Eskom coal powered stations, Majuba; Thuthuka; Grootvlei and Campdon. There is also a degree of focus on tourism and conservation areas, with game reserves, dams and hostels. Economic activity and employment is not evenly spread over the DM, but is concentrated largely in the Govan Mbeki local municipality.

Nkangala is at the economic hub of Mpumalanga and is rich in minerals and natural resources. The District's economy is dominated by electricity, manufacturing and mining. The manufacturing sector in Middelburg is a major contributor to the province's GDP. Strengths within the District include the Maputo Corridor, which brings increased potential for economic growth and tourism development, and the proximity to Gauteng, offering wider markets and export opportunities.

### ***The number of companies per sector in Mpumalanga***

The table below represents the number of companies per sector in Mpumalanga.

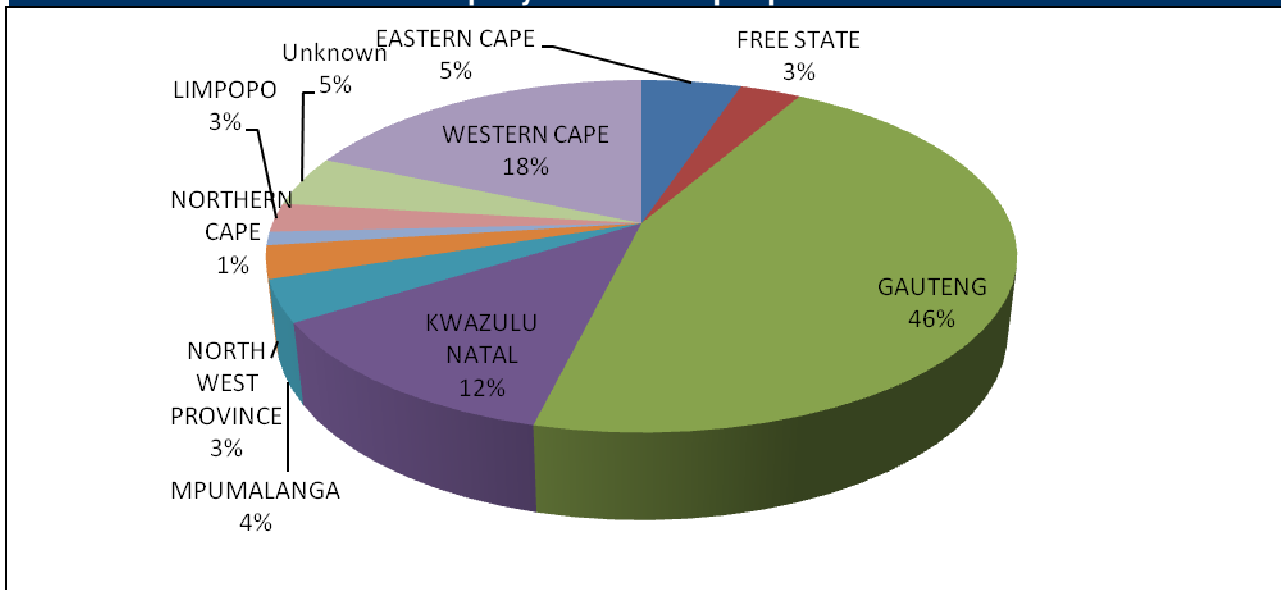
<b>Table 58</b>						
<b>Number of organisations per sector in Mpumalanga, 2008</b>						
<b>Number of organisations by industry sector by turnover segment</b>	<b>Micro (under R1m)</b>	<b>Small (R1m-R15m)</b>	<b>Medium (R15m-R60m)</b>	<b>Large (R60m-R600m)</b>	<b>Total</b>	<b>% of national total</b>
Agriculture	1290	523	58	17	1888	8.7
Catering accommodation and other trade	681	236	6	0	923	4.7
Community; social and personal services	856	218	11	1	1086	2.5
Construction	2138	694	49	7	2888	6.9
Electricity; gas and water	71	16	1	2	90	6.1
Finance and business services	5985	1313	80	17	7395	2.9
Manufacturing	1350	752	94	30	2226	3.5
Mining and quarrying	75	70	13	4	162	6.3
Retail and motor trade and repair services	2206	1121	159	41	3527	4.7
Transport; storage and communications	670	269	38	9	986	4.9
Wholesale trade; commercial agents and allied services	563	358	57	10	988	4.4
Unclassified	130	50	2	0	182	3.2
<b>Total</b>	<b>16015</b>	<b>5620</b>	<b>568</b>	<b>138</b>	<b>22341</b>	<b>3.8</b>
<b>% of national total</b>	<b>3.9</b>	<b>3.8</b>	<b>3.1</b>	<b>2.0</b>	<b>3.8</b>	

Source: StatsSA, September 2008; BMI-T, 2009

The active, yet less formal, nature of the economy in Mpumalanga is reflected in the shape of the table above. Agriculture forms 8.5% of the whole, hospitality and catering is focused on the micro/small sector (99%) and 71% of the 2,138 construction companies are micro-sized.



**Figure 166**  
**Company distribution per province**



Source: Stats SA, 2008

The figure above shows company distribution per province. Only 4% of businesses are found in Mpumalanga.

### ***Industry sectors in Mpumalanga***

#### ***Mining***

The mining industry reached R28,442 million in 2007 on the back of a 1.5% CAGR for the 1999-2007 period. However, growth was just 0.5% for the year 2007. The mining industry in Mpumalanga produces locally and globally important commodities including coal, gold, platinum, copper, iron ore, nickel, asbestos and quartzite amongst others.

Coal and gold mining form the greater portion of Mpumalanga's mining activities.

Extensive coal resources sustain several large coal-fired power stations and the petrochemical plants at Secunda. The Richards Bay coal terminal is also fed from this area by the rapid-loading terminal outside Witbank. The terminal is continually upgraded to meet increasing export demand. Coal mining is concentrated in the Highveld, between Witbank, Standerton, Piet Retief and Carolina, with the biggest local buyer being Eskom (unwashed coal used for power generation), followed by Sasol petrochemical plants, metallurgical industries, the transport sector, and domestic users. The coal mining industry is expanding rapidly in the province, with a large number of the coal deposits being found at the surface and being able to be cheaply extracted. The coal industry is expected to expand in the short-term due to the demand of local and export markets. The coal-based industry is closely linked to the power sector, due to the production of coal-based electricity by Eskom, which is under extreme pressure to increase power production.

Most of Mpumalanga's gold is found in the Evander and Barberton areas, with most of the gold being mined in deep-level underground mines. Gold mining has shown a decrease in production.

The map below illustrates the distribution of mines in Mpumalanga.



mills, sawmills, fruit and vegetable processors, and board (plywood, particle, etc) manufacturers are among the major manufacturing concerns in the Lowveld.

Mpumalanga primarily produces goods for intermediate consumption (for example pulp, chemicals, metals, timber and paper). Current manufacturing facilities are essentially primary in nature, implying a large proportion of value added potential in downstream activity is not being realised in the province. In total there are approximately 42 primary processing plants in Mpumalanga, consuming 29% of total South African wood production. Capital investments in the processing plant infrastructure have been estimated to reach about R4 billion. 17% of Mpumalanga's gross value of manufacturing output is derived from the forestry products industry, and 4.9% of its total gross value.

### *Finance, real estate and business services*

The finance, real estate and business services sector reached R15,571 million in 2007 on a 4.13% CAGR over 1999/2007. Annual growth in 2007 was the strongest of all sectors that year, at 6.4%, after 7.1% growth the previous year. When compared to other provinces, the industry is very small which should bode well for development of this sector.

### *Wholesale and retail*

The wholesale and retail sector, the fourth largest contributor to GDP in the province, at R12,500 million, grew at 4.8% in 2007, a notable decline from the 7.6% growth in 2006, while still exhibiting a CAGR of 4.6% over the past eight years.

Retail trade employs a quarter of all labour in the province.

### *Electricity and water*

Mpumalanga has well-developed bulk-electricity supply systems. Cheap power is in adequate supply. Thanks to its large coal deposits, Mpumalanga accommodates most of the power stations in South Africa. In fact Eskom's ten coal-fired power stations in Mpumalanga represent 68% of the total net maximum electricity-generating capacity of South Africa. Together ten power stations produce close on 23,000 megawatts of electricity.

In 2007, the production of electricity, gas and water contributed R6,087 million to GDP, at a growth rate for the sector of 3.2%.

Water, a scarce yet essential resource in all provinces, is utilised extensively by many pivotal sectors (including the top sectors) in Mpumalanga, including forestry, agriculture, grazing, mining and manufacturing. Mpumalanga is one of the wetter provinces, and forms part of the source of four of southern Africa's main river systems. Mpumalanga has six geomorphologic areas with distinct land use and hydrology. These are the Highveld, the Eastern Bankenveld, the Bushveld Basin, the Middleveld, the Drakensburg and the Lowveld.

As such, the impact that water can have on these top sectors is definitive, for example the lack of water or efficient water supply to the forestry and agricultural sector could lead that sector to failure of growth and production, and thus a heavy drop in profitability and economic sustainability. A number of programmes have been embarked upon to alleviate the water tensions, including the formation of river forums (demonstrating the commitment of the mining, industry and agriculture to the protection and maintenance of ecosystems and water supply). Other programmes include the Working for Water programme, Community Water Supply and Sanitation (CWSS) programme, Catchment

Management Agencies (responsible for integrated water resource management), and others.

Projects currently being assessed and implemented are discussed under Growth opportunities, below.

### *Agriculture*

Agriculture in Mpumalanga is characterised by a dichotomy of highly sophisticated and fully commercialised farming practices in most farming areas and subsistence livestock and emerging crop farming in the rest. Agricultural production ranges widely from summer cereals and legumes in the Highveld region to subtropical and citrus fruit and sugar in the Lowveld. For the most part, dry-farming land is utilised in agricultural production, but there are extensive irrigation activities in the Loskop Dam area near Groblersdal and in the Lowveld area adjacent to the Crocodile and Komati Rivers.

The agro-economy of Mpumalanga is of major economic importance. It produces a substantial portion of South Africa's agricultural output, at 9.6% of 2007 national agricultural GDP; it is the second largest contributor after KwaZulu-Natal. In 1998 Mpumalanga produced almost one fourth of the South Africa's maize, grain sorghum, cotton and citrus; representing one third of South Africa's subtropical fruit and more than half of the countries dry and soya beans. Other major crops are sugar cane, tobacco, a wide variety of citrus, tropical and sub-tropical fruits and vegetables, soy and dry beans, sunflower seeds, and livestock and livestock products.

In terms of GDP, agriculture and forestry only contributes 3.9% of Mpumalanga's GDP, at R5,454 million. Growth in 2007 was 2.2%, after -8.7% in 2006, showing the typical volatility of the agricultural sector. CAGR over from 1999 to 2007 was 0.4%.

Within the agricultural sector, maize is an extremely crucial production sector for the domestic economy. Agriculture assists in job creation and economic development, and the focus of extending this sector in Mpumalanga is on commercial high-input farming. Alternatives to the traditional farming traditions are found in game farming and nature conservation, the latter being promoted by the Mpumalanga Parks Board.

### *Forestry*

The forestry and forest products industry is an important sector in Mpumalanga's economy. Not only is the industry a major and environmentally responsible user of land, it also plays an important role in the creation of wealth and employment opportunities and contributes to the development of rural infrastructure and human resources.

Mpumalanga is South Africa's major forestry production area. Beneficiation from the plantations in the province include pulpwood, sawlogs, veneer logs, mining timber, poles and matchwood, as well as pulp, paper and board. Mill sawmills and processing plants are situated in Mpumalanga.

Forestry is concentrated in two major corporates, Sappi (29.7% of sales) and Mondi (29.1%); and the NCT Forestry Co-operative (13%), Global Forests Products Pty Ltd (GFP) (5.1%), as well as the parastatal, South African Forestry Ltd (SAFCOL), which owns Komatiland Forests (KLF) (10% of sales). SAFCOL's objectives are to enhance the development of the local forestry industry and to optimise the State's forestry assets. In 2001/02, SAFCOL's commercial forestry operations were restructured to facilitate privatisation transactions which were achieved by the end of 2005. SAFCOL's remaining responsibilities now include aftercare of the transactions, residual shareholding and various management obligations in certain areas. The saw-milling industry comprises a

large number of companies, with the five biggest companies contributing 51% of total production.

The recent afforestation in Mpumalanga has been prompted by the private sector, where the demand for planted land is growing at a steady rate as opposed to increase in yield efficiency. There is an increasing demand by overseas importers for produce that is environmentally responsible, asking for the "green" labelling on products – this is stimulating the industry to improve their environmental sustainability.

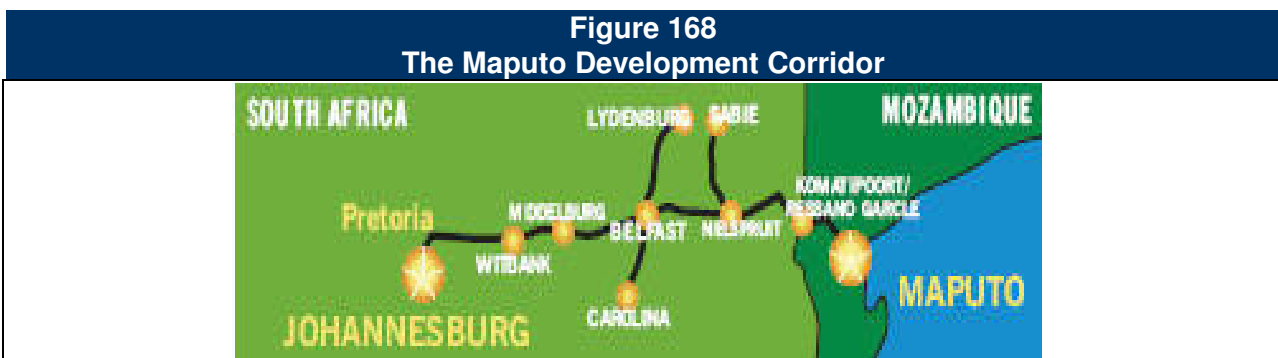
Mpumalanga's high potential forestry areas are typically also the areas of high agricultural, water yield and conservation potential resulting in land-use conflicts.

### *Transport*

The transport sector, at R9,693 million, contributed 7.0% of GDP in 2007. Growth in 2007 was 5.7%. With a CAGR of 6.0% for the period 1999 to 2007, the transport sector has exhibited the strongest growth over the past eight years of any sector in the province.

#### **The Maputo Development Corridor**

The Maputo Development Corridor (MDC), which has achieved nearly all of its original objectives, is the most advanced Spatial Development Initiative (SDI) in Africa. The Maputo Development Corridor is a transportation corridor; comprising road, rail, border posts, port and terminal facilities. The main arteries of the Corridor are the N4 highway and the railway: the Corridor runs from just outside Pretoria (Tshwane) in Gauteng through Witbank, Middelburg and Nelspruit in Mpumalanga, to Maputo the capital of Mozambique.



Source: MEGA.co.za

South Africa, Mozambique and Swaziland have promoted the revival of the Maputo Corridor with policies and substantial public and private sector investments designed to stimulate sustainable environmental, economic and social development in the region. Some of the developments include the extension of the commercial border hours, the bilateral commitment to the one-stop border post, the co-operation between Mozambique Ports and Railway Company (CFM) and Spoornet on the rehabilitation and stabilisation of the rail-line, and the increase in shipping lines calling direct at Maputo on their Far East services.

### *Tourism*

In the tourism sector, in addition to the Kruger Park, there are 70 other game reserves and lodges.

## **Economic development initiatives**

### ***Current national government policy initiatives***

Key national Initiatives include:

- ASGI-SA
- Micro Economic Reform Strategy (MERS)
- Regional Industrial Development Strategy (RIDS – draft 2006)
- The National Spatial Development Perspective (NSDP)
- Joint Initiative on Priority Skills Acquisition (JIPSA)
- the Anti-Poverty Strategy
- National Industrial Policy Framework and Industrial Policy Action Plan (IPAP)

The National Spatial Development Perspective (NSDP) in particular, has an impact on the development at a district municipality level. Five principles to guide development decisions have been formulated.

Principle One: Economic growth is the prerequisite for the achievement of other policy objectives such as poverty eradication and equitable development.

Principle Two: Government infrastructure investment – beyond basic service delivery – will be in areas of high development potential or economic growth, focusing future settlement and economic development opportunities into activity corridors and nodes adjacent to, or linked to main growth centres. Rather increase the footprint of existing urban areas through incremental development and densification, than initiate new greenfield developments far removed from all existing infrastructure and economic activity.

Principle Three: Efforts to address inequalities should focus on people and not places.

Principle Four: Areas with high levels of poverty and high development potential should receive investment beyond basic services to exploit this potential.

Principle Five: Areas with high levels of poverty and low development potential should receive investment to provide basic services as well as social transfers, HRD, and labour market information.

### ***Current provincial government policy initiatives***

On a provincial level, key initiatives include:

#### ***Mpumalanga Provincial Growth and Development Strategy (MPGDS)***

The Mpumalanga Provincial Growth and Development Strategy (MPGDS), which was first adopted in 2005, was recently updated in September 2008.

The 2008 Provincial Growth and Development Summit endorsed the existing PGDS, grounded on four pillars: Poverty alleviation, employment, growth and environmental sustainability. The MPGDS has adopted the following as its primary guidelines: the United Nation's Millennium Development Goals (MDGs); the Accelerated and Shared Growth

Initiative for South Africa (ASGISA) and the National Spatial Development Perspective (NSDP) of South Africa.

The conference agreed to establish the Provincial Development Council (PDC) which will be responsible for implementation oversight and monitoring of the agreed resolutions. The council will be chaired by the premier and have representatives from organised labour, civil society and the private sector. The following emerging areas of priority were identified to require detailed discussion at PDC level:

- Agricultural development
- Skills development
- Economic growth and job creation
- Investment in strategic infrastructure
- Environmental sustainability
- Key themes were listed as:

#### 1. Agricultural development

- Robust agricultural development strategy
- Speed up land reform programme
- Comprehensive post-settlement support to land reform beneficiaries
- Agro-value chain centres (agro-processing, supplies)

#### 2. Skills Development

- Quality of education across all levels
- Centres of excellence to address targeted skills needs
- Establishment of a university in Mpumalanga Province
- Human Resource Development Strategy
- Science centres

#### 3. Economic growth and job creation

- Economic development strategy – prioritising key economic sectors that have impact of job creation
- SMME development (financial and non-financial support)
- Informal sector development
- Promotion of trade and investment
- Spatial development initiatives (MDC, MRDC)
- ICT development
- Second economy interventions (break social grants dependency)

#### 4. Investment in strategic infrastructure

- Public-private partnership in infrastructure development

- Integrated public transport
- Roads
- Logistics and freight
- Air transport
- Water and sanitation (addressing old and ailing infrastructure)
- 5. Environmental Sustainability
  - Local government's capacity on environmental management issues
  - Water demand management
  - Improved management of EIAs
- 6. Tourism, biodiversity and cultural heritage
  - Cultural tourism
  - Protection of sensitive ecosystems
- 7. Energy and mining
  - Renewable energy
  - Sustainable mining development
  - Community ownership and participation in mining development
- 8. Social Cohesion
  - Integrated social cohesion strategy
- 9. Public Service Delivery
  - Integrated quality health care
  - Delivery of Basic services
  - Human settlements
- 10. Cooperative Governance
  - Integrated development and spatial planning
  - Integrated land use planning
  - Innovation hub

### *Mpumalanga Rural Development Programme (MRDP)*

The Mpumalanga Rural Development Programme (MRDP) was established in 2001, co-ordinated by the office of the Premier and technically supported by the German Technical Cooperation (GTZ) and the German Development Service (DED).

The main objective of the Programme is to contribute towards an "improvement of the social and economic situation of the rural poor." The programme focuses on the creation of income and employment in rural areas. The key concepts of the programme include:

- Self reliance/empowerment: strengthen the self-help capabilities of the communities and emphasise development planning



- Economic growth: encourage local economic development, employment and income generation through the promotion of small and micro-sized rural enterprises and the participation of the private sector
- Sustainability: improve viable and sustainable natural resource utilisation
- Outreach: upgrade and broaden the facilitation of government services to the impoverished
- Capacity building: strengthen, advise and train service providers
- Innovation: develop innovative concepts for public service delivery
- Mainstream: get innovations on track
- Coping with HIV/AIDS: plan, design and implement relevant strategies in order to cope with HIV/Aids
- Stakeholder participation: ensuring participation by all concerned

It is important for the GSDM and its local municipalities to draw the concepts and principles of this plan down to local level, through spatial development policies and strategies.

### **Gert Sibande District Municipality development initiatives**

In its 2008/09 IDP (Integrated Development Plan), the district municipality (DM) classified its local municipality areas by economic activity and business functions as defined by the NSDP, as can be seen in the table below:

<b>Table 59 NSDP classification for selected municipalities in Gert Sibande</b>			
<b>Number</b>	<b>NSDP classification</b>	<b>Municipal name</b>	
A	High levels of economic activity (potential)	Govan-Mbeki	LM
		Lekwa	LM
B	High levels of poverty concentrations	Albert-Luthuli	LM
		Mkhondo	LM
		Pixley-Ka-Seme	LM
		Msukaligwa	LM
		Govan-Mbeki	LM
		Dipaleseng	LM
		Lekwa	LM
C	Area of combined poverty and economic activity	Govan-Mbeki	LM
		Lekwa	LM
		Msukaligwa	LM
		Albert-Luthuli	LM
		Mkhondo	LM
		Dipaleseng	LM
		Pixley Ka Seme	LM
D	Environmentally sensitive/irreplaceable		

<b>Table 60 Business function index in the Gert Sibande area</b>	
<b>Characteristic</b>	<b>Human settlements</b>
Human settlements with a business function index of more than 1:- High levels of formal local economic activity - High dependence on surrounding area for resource inputs - constitutes the first and second order/primary and secondary economic activity nodes	Ermelo Secunda Bethal Standerton Piet Retief Evander Carolina Volksrust
Human settlements with a business function index of less than 1: - Low levels of formal local economic activity - High dependence on higher order settlements for specialised goods and services - High levels of public sector investment	Amersfoort Elukwathini Wakkerstroom Amsterdam Badplaas Leslie Greylingstad Mpuluzi Langkrans Breyten Morgenzon Moolman Dundonald Lothair

	Crisslesmeer Oshoek Jericho Davel Sheepmoor Val
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### *Challenges within the GSDM*

Reflecting on the demographics of the district, the IDP document identifies the following challenges to implementing development:

The District is predominantly rural in nature with key anchor towns that dominate the urban settlements; these create a big challenge for the District in terms of provision of services, and coordination of planning, development and also the expensive nature of providing services to these rural areas, since most of the people reside therein.

Since the dominating categories of the District's populace are women and youth, any form of future regional development intervention must be more biased towards emancipation of women and empowerment of youth. This however should not imply total disregard development aspirations of the elderly residing within the District.

The large proportion of black Africans means that the plight of Africans as the culmination of the Apartheid policies and lasting impacts thereof must be accordingly addressed towards ensuring a transformed and an integrated society.

Looking at municipal responsibilities, the IDP identified the following challenges:

The lack of certainty with regard to the 'Powers and Functions' between the District and Local Municipalities is one of the fundamental challenges impeding effective Municipal Planning, whilst brewing unnecessary conflicts among municipalities at the same time.

Due to capacity constraints, GSDM has assumed responsibility for several functions at some of the LMs at varying levels. Thus, office space in the current building presents the District with some challenges and it is not customer focused in relation to the service rendered to the public at large.

The GSDM considers that the following factors impinge on its ability to perform all its Powers and Functions effectively: Current Grading, Predominant rural nature of the District, Operating in silos, Inability to retain skills, Bureaucratic processes and delayed turnaround time in the re-allocation of functions coupled with relational financial resources.

The following Key Issues pertaining to Powers & Functions have thus been identified:

- Need to undertake an audit of all the powers and functions been currently performed by varying stakeholders in the District
- Need to continually improve the design of the current staffing structures, so as to ensure that all the employees match and are able to perform all the assigned functions.

### *Potential economic hubs*

The GSDM identified the following potential economic hubs in its IDP:

#### **N17/N2 Development Corridor (Leandra to Piet Retief)**

The GSDM has identified potential development along the N17 Corridor. N17 is a national road linking Mpumalanga with Gauteng and cuts across Gert Sibande ending at Oshoek

border post entry to Swaziland, moving goods and people between Gauteng, Mpumalanga and Swaziland linking up to the Maputo Development Corridor and the N2 to KZN. N17 has been identified as a major corridor within the District that could be developed to provide downstream industries for petro chemical industry and the mines within the District including forestry beneficiation industries.

The District in partnership with investors and other spheres of Government and Private Sector will be looking at undertaking feasibility study along the corridor for the following:

1. Manufacturing Hubs-industrial zones (light and medium industrial parks)
  2. Industrial Workshops
  3. Cold rooms and storage facilities
  4. International Conference Centre
  5. Regional sport facilities
- Other benefits perceived include:
    - Medium and High income Housing Projects
    - Shopping Centres/Mall
    - Leisure Facilities
    - Improve revenue for the local municipalities to provide improved services

#### **N11 Development Corridor from Pixley Ka Seme to Albert Luthuli**

N11 is a national road linking Mpumalanga with KZN and traverses Gert Sibande ending at Volksrust to KZN. N11 has been identified as a major corridor within the District that could be developed to provide beneficiation downstream industries for forestry industry, tourism services and facilities including mining within the District.

The District in partnership with investors and other spheres of Government and Private Sector will be looking at undertaking feasibility study along the corridor for the following:

1. Manufacturing Hubs industrial zones (light and medium industrial parks)
2. Leisure facilities
3. Agro processing facilities

A feasibility study into the development of the N11 Corridor has been proposed.

It is hoped that the participation of the private sector will have the following impact:

- Medium and High income Housing Projects
- Tourist attraction facilities and centres (cultural villages, game reserves, art galleries, museum
- Improve revenue for the local municipalities to provide improved services

#### **N2 Development Corridor**

N2 is a national road linking Mpumalanga with KZN and cuts across Gert Sibande joining N17 and ending at Gauteng. N2 has been identified as a major corridor within the District

that could be developed to provide beneficiation downstream industries for forestry industry, tourism services and facilities including mining within the District.

The District in partnership with investors and other spheres of Government and Private Sector will be looking at doing feasibility study along the corridor for the following:

1. Forestry Downstream Manufacturing Hubs
2. Tourist and Leisure facilities
3. Agro processing facilities and enhanced farming

The District believes that the contribution of the private sector in this venture will translate into

- The development of tourist attraction facilities and centres (cultural villages, game reserves, art galleries, museums)
- Improved revenue for the local municipalities to provide improved services
- Economic diversification and economic empowerment

#### *Establishment of the GSDM Development Agency*

This would be a focused implementation agency / entity which will strategically focus on delivering the following mandate on behalf of the District:

- to coordinate and manage the identified economic development initiatives (projects)
- coordinate and manage key stakeholders
- facilitate marketing and investment initiatives
- solicit funding and technical support for the identified anchor projects and the identified beneficiaries

Through the establishment and support of cooperatives the District in partnership with the agency envisage achieving the following objectives:

- To broaden and diversify the economic base of the District
- facilitate, support the development, capacity building and skills development of SMME's including emerging entrepreneurs
- To facilitate, promote and support agriculture, mining, manufacturing, and tourism development, down streaming and local beneficiations
- To facilitate and support programmes aimed at reducing unemployment
- To facilitate, support and address initiatives that are aimed at addressing economic inequalities with emphases on women, youth and the disabled.

The IDP of the GSDM further identified the following:

## *Strategic Development Master Plans*

### **Heyshope Dam Development Master Plan and cultural Village**

The dam area, by virtue of its location and unique features, comprising water feature, secluded location with both rural and urban characteristics, has the potential to be developed into a an attractive leisure, lifestyle as well as holiday and conference hub that will attract tourists and water sports enthusiasts comparable to that of the Hartebeespoort Dam west of Pretoria in Gauteng.

### **Tourism Master Plan**

Tourism has not been a key sector in the District economy, but this sector is seen to have “incredible potential”, for a number of reasons:

The availability of tourist attraction facilities and natural sites e.g. conferencing facilities, casino, resorts, motels, game farms, wetlands and Bed and Breakfast accommodation.

There is a new tourism phenomenal which has been developed within the District which is township and industrial tourism, this offer a unique tourist adventure to our petrochemical industry and township site visits.

### **District Industrial Development Strategy (DIDS)**

With the adoption of the National Industrial Policy Framework (NIPF) and the draft Regional Industrial Development Strategy (RIDS), it has become imperative for the GSDM to start refocusing itself into growing its industrial base. The focus of the envisaged DIDS would be on the four sectors identified in the NIPF for their high growth, export and job creation potential. These sectors are

- Chemicals, plastic fabrication and pharmaceuticals
- Capital or transport equipment and metals sector
- Mining and Industrial Workshops
- Forestry, pulp and paper and furniture manufacturing

### **Mining Beneficiation Master Plan**

Despite having several mining operations within the District, there is limited benefits and economic empowerment from the mining activities for the surrounding communities. The Master Plan will enable and promote coordination of all stakeholders’ interest partnership, resources and efforts to contribute to downstream economic beneficiation, implementation of BBBEE, community development and economic empowerment including significant.

### *GSDM SWOT analysis*

The IDP developed a SWOT analysis for the district:

**Figure 169**  
**GSDM SWOT analysis**

STRENGTHS	WEAKNESSES
Source: Local Municipalities data and Sector Departments	Huge backlog of Basic Services
There is untapped minerals deposits , development potential and economic growth potential	Lack of Marketing and incentives for investors
Strategic location of the District	Lack of capitalisation of the strategic advantage
Improving Institutional arrangement	Delay in filling key vacant posts / retention of skill personnel
Good relationship with other Stakeholders and Private Sector.	Poor to lack of participation and commitment by business and some sector departments.
There is political will and guidance	Implementation is still a challenge
OPPORTUNITIES	THREATS
Huge Potential for Development and Economic Growth	Limited Skills to Support Development and Economic Growth within the District.
Organisational arrangement to meet the challenges	Recruitment and Retention of Skilled Staff
Increase interest by outside investors	Lack of Spatial Development Frameworks
Stakeholders / Sector departments and District's goodwill to improve current slow development and Economic Growth.	Poor attendance to Forums and/lacking commitment from Stakeholders, slow expenditure and delivery of projects and the outstanding Spatial Development Framework Plans
District has developed its Economic Growth and Development Strategy	Limited commitment by other stakeholders

Source: GSDM IDP

The Gert Sibande District Municipality IDP summary of key issues is in the IDP document (IDP pages 75 to 79), as is the objectives, strategies and performance indicators (IDP page 82 – 111

### ***Nkangala District Municipality development initiatives***

In order to address development issues, the following strategies have been proposed:-

- Infrastructure development and service provision that meets priority needs of communities.
- Integrated development planning and proper co-ordination and integration of development initiatives in the district.
- Ensuring the fair and just allocation and distribution of resources within the district.
- Encouraging and supporting the effective performance and functioning of municipalities in the district.
- Enhancing the economic development and growth within the district.
- Promoting a healthy and safe environment.

The District identified seven anchor projects and accordingly business plans have been developed.

- Catalytic Converter ( R290 m)
- Truck port/Logistics Hub (R16395/sqm)
- Multi Purpose Community Centre (R63m)
- Agro-processing (R73m)
- Convention Centre (R110m)
- Moloto Corridor Rail System (R2.4b: phase 1)
- Highlands Gate and Estate Development (R850m)

### ***Mpumalanga government projects underway:***

In March 2008 the provincial budget for the 2008/2009 financial year was presented, based on certain assumptions, amongst which was that higher economic growth rates were anticipated to be stimulated by increased focus on the following priority areas:

- maximising agricultural potential of the province through the manufacture of biofuel and agro processing
- expanding on the construction industry, especially in new developments such as building of roads, stadia, hospitals, schools etc
- maximising the potential of the tourism industry

The government announced that they had adopted a public private partnership policy, intended to assist in fast tracking service delivery and infrastructure development. As at 31 January 2008, spending on the infrastructure grant amounted to R413,295 million, being 74.9% of the adjusted budget of R565,318 million.

An intervention to be implemented over the next two years is the Provincial Technical Assistance Support Teams and Operations Support Teams deployed to the infrastructure delivery departments that will focus on the following:

- resolving constraints that hinder the infrastructure development process
- implementing the Government Immovable Assets Management Act ideal of making users and custodians responsible for the infrastructure, especially the aspects that consider the maintenance of facilities
- ensuring effective prioritisation so that money will be spent where it is most needed
- ensuring that the education property portfolio master planning is based on National Education Information Management Systems
- ensuring that long-term strategic planning needs are done at macro-priority level



The Mpumalanga government has embraced five Flagship Projects, with the potential to grow the province's economy, announced in the Premier's State of the Province Address at the beginning of 2007. The "Big Five" flagship projects were:

- Maputo Development Corridor (industrial infrastructure projects would be implemented to create an environment for business operations along the corridor; such projects would include the establishment of freight logistics; the corridor would also promote manufacturing among small, medium and large enterprises in the province.)
- Moloto Rail Development Corridor
- Initiative to revitalise tourism and greening the province through conservation management
- Rolling out water infrastructure - the Water for All Flagship Project (WAFP)
- Capacity building of managers

In the 2008 Address, the Premier identified 2008/09 projects:<sup>5</sup>

The Maputo Development Corridor. To advance the implementation of the Maputo Development Corridor, the province initiated interactions with private sector players and municipalities located along the corridor. In order to fully exploit the opportunities unlocked by substantial investment in transport infrastructure, the province planned, in the 2008/09 financial year, to focus on:

- the local economic development strategies and programmes of municipalities located along the corridor in order to grow the identified competitive industries of these towns
- further development of transport infrastructure, including upgrading the rail network, improving truck stops and implementing a one-stop border post
- investment in industrial parks, trade facilitation initiatives, and effectively marketing the corridor. Work has commenced on the development of the Witbank/Middelburg Industrial Park.

The Moloto Development Corridor project, which is underway (see under Transport projects in this section of the report for more detail). The feasibility study is completed, and the task of constructing the railway line has been handed over to the South African Rail Commuter Corporation.

The rehabilitation of the coal haulage network grid is another priority. The government is working with key stakeholders, in particular Eskom, South African National Road Agency Limited (SANRAL) and the Chamber of Mines, to define the coal haulage grid where mass coal transport is permitted, and exploring funding models for rehabilitating the network. Over the next five years, R3 billion is committed to reconstruct the network.

In the 2008/09 financial year, the key agricultural sector will be supported by range of strategies to enhance production. These include upgrading the skills of farmers through

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<sup>5</sup> State of the Province Address of the Premier of Mpumalanga, Thabang Makwetla, to the Opening of the Fifth Sitting of the Third Democratic Legislature, Nelspruit 22 February 2008

technical, business and management training in order to equip farmers with the requisite skills to farm successfully. The Comprehensive Agriculture Support Programme will continue to provide farming infrastructure to rural communities to support increased agricultural production. Other agricultural projects include increasing cultivation and processing of soya beans into biofuels, and the Masibuyel' Emasimini project which provided 52 tractors, seeds and fertilizers to the rural poor in order to maximise food production in poor rural areas of the province.

SMME support programmes resulted in the establishment of 10 co-operatives, assisted 195 enterprises to access funds and 780 entrepreneurs to access business development services in 2007/08. Non-financial support to small, medium and micro enterprises (SMMEs) through the Mpumalanga Economic Growth Agency (MEGA) and the Small Enterprise Development Agency (SEDA) has been vastly improved to expand access to support by entrepreneurs.

### **Major growth opportunities/drivers**

Mpumalanga economy poised for expansion<sup>6</sup>

Plans by the Mpumalanga provincial government to establish a provincial growth fund are nearing completion. This became evident when it was announced that two prominent individuals were appointed to serve as the provincial government's trustees of the Mpumalanga Growth Fund. Mr. Lot Ndlovu, CEO of NEDCOR and Mr. Lumkile Mondi, vice President of the Independent Development Corporation (IDC) were confirmed as trustees of the soon to be launched Mpumalanga Growth Fund. Additional three Trustees will be appointed to represent private sector funders.

The purpose of the fund is to, among others, avail funds for use in areas with potential for economic growth. It's a focused government intervention to unlock growth in sectors such as tourism, agro business, bio fuel, transportation and logistics, bulk water and sanitation infrastructure etc. The fund will also mobilize substantial private sector co investments in order to enable economically viable projects to access commercial finance.

The provincial government has pledged a seed capital of R200million for the fund and a minimum loan size will be R20 million.

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<sup>6</sup> MPUMALANGA CABINET STATEMENT 29/01/2009

## **The drivers of expansion in Mpumalanga**

### *Mining*

- Electricity expansion projects are fuelling the demand for coal.
- There are a number of mining projects underway in Mpumalanga, both new mines and expansions of existing mines. The major developments are listed below.

<b>Table 61 Mining projects underway in Mpumalanga, 2008</b>	
Koorfontein mine new development project	The project involves the development of the four seam at the Koorfontein mine.
Mooiplaats coal project	The project will see the construction of a coal mine on a series of adjacent 'farms', comprising roughly 16 000 ha adjacent to the Camden power station.
New chrome and platinum recovery plants	The project involves the construction of two new chrome and platinum recovery plants at Samancor Chrome's Doornbosch and Tweefontein chrome mines.
Goedgevonden project	African Rainbow Minerals (Arm) and Xstrata Coal have announced the development of a major new greenfields, opencut, thermal coal mine - Goedgevonden.
Zondagsfontein coal project	The Zondagsfontein project will entail the construction of an underground mine and an opencast pit.
Phola coal-processing plant	The project will see the construction of a 16-million-ton-a-month coal-washing facility.
New-generation heap-leach project	The Elandsdrift heap-leach pad is a pilot project designed to confirm the metallurgical parameters of the extraction process on a 300 000-t sand dump.
Klipspruit coal-mine	Klipspruit coal-mine project entails the development of a new coal-mine near Ogies
Douglas/Middelburg Optimisation project	The DMO is a brownfields thermal-coal project located in the Witbank area of Mpumalanga. The project combines the resources from the adjacent reserves of the Douglas colliery and Middelburg mine
Nkomati nickel mine phase 2 large-scale mining expansion	The project will involve the expansion of the highly-mechanised Nkomati mine and will add to its nickel output. The mineral rights stretch over the farms Slaaihoek and Uitkomst.
Sheba's Ridge platinum-group metals project	The prefeasibility study for the Sheba's Ridge project envisages an openpit about 3 km long, 1 km wide and 400 m deep.
Mafube expansion project	The Mafube expansion project entails the development of an openpit coal mine near Standerton

Booyssendal platinum project	The project will involve the construction of a platinum mine at Booyssendal, a well-explored area on the eastern limb of the Bushveld Complex.
Inyanda coal joint venture project	The project will involve the development of an openpit coal-mine at Kalbasfontein, north-east of Witbank
Brakfontein Merensky platinum project	Brakfontein Merensky platinum project is both a replacement and expansion project. It is designed to facilitate a rate of production of 120 000 t of ore a month from surface.
New-generation heap-leach project	The Elandsdrift heap-leach pad is a pilot project designed to confirm the metallurgical parameters of the extraction process on a 300 000-t sand dump.
Diepspruit reserve development	The project will involve the development of the Diepspruit reserve at the New Clydesdale Colliery.
Mototolo mine	Anglo Platinum (Angloplat) and Xstrata Alloys have formed the Mototolo joint venture (JV) to develop a platinum-group metals (PGM) mine and concentrator on the eastern limb of the Bushveld Complex

Source: Creamer Media; company websites; BMI-T, 2009

### *Manufacturing*

Some of the opportunities in Mpumalanga's manufacturing industry range from investment in large-scale primary material production to the further beneficiation of locally available raw materials and intermediate products, manufacturing of final products and opportunities deriving from the Maputo Development Corridor initiative. Manufacturing output needs to be increased by developing downstream value-added industries for exports based on large-scale operations such as Sasol and Columbus Steel.

#### **Beneficiation/value added potential of downstream manufacturing activity.**

Five major industrial clusters have been identified in which numerous investment opportunities exist:

##### **Stainless steel**

In the manufacturing sector, through the presence of Columbus Stainless based in Middelburg, in the Nkangala district, there are opportunities through the economic strength in the production and availability of stainless steel, which provides a wide variety of greenfield and joint venture opportunities in the production of products such as pipes and tubes, hollowware, cutlery, catering equipment and catalytic converters.

There is global demand for stainless steel which is running at 6.5% per annum. About 30% of local demand for stainless steel raw material is derived from the manufacture of exported goods. Columbus Stainless, the fifth-largest stainless steel manufacturer in the world, creates numerous downstream manufacturing opportunities. These include hollowware, kitchen sinks, catering equipment, tubes and pipes, cutlery, catalytic converters and general manufacturing for the chemical, building and transport industries. The development of a stainless steel techno park in Middelburg, where Columbus Stainless is based, is also in the planning stage.

Many users of stainless steel in South Africa are export focused. Exhaust and catalytic converter systems are supplied to leading manufacturers, including BMW, DaimlerChrysler, Volkswagen, General Motors, Ford, Toyota, Nissan, Renault etc.

#### **Chemicals and chemical products**

More than 22% of South Africa's chemicals and chemical products are produced in Mpumalanga.

Numerous products and feedstock are available from the major producers such as Sasol, AECI and Polyfin for downstream manufacturing. Examples are solvents, tar products, inorganic materials, petrochemical feed stocks and fuels.

The Mozambique-South Africa pipeline project, from Maputo, Mozambique to Kendal, in Mpumalanga, is being undertaken by the National Energy Regulator of South Africa (Nersa) (construction licence) and Petroline RSA in a 50:50 joint venture with Petroline SARL of Mozambique. Petroline RSA has four main shareholders: Woesa Consortium, Gigajoule International, Petros De Mozambique, and Companhia De Desenvolvimento De Petroleo Mozambique SARL. The project, scheduled to cost R4.2 billion should be completed in 2009. It entails the construction of a liquid petroleum pipeline from the border of Mozambique at Komatipoort, to Kendal, through Nelspruit. The pipeline will run from an existing coastal fuel-storage facility at Matola harbour, in Mozambique, to the Nelspruit area, in Mpumalanga, South Africa, where an inland storage depot will be constructed, complete with rail-and-road offloading infrastructure. The pipeline will then continue to Kendal, where it will potentially join the current Petronet petroleum pipeline network for inland distribution of the petroleum product.

#### **Agricultural products: Food processing**

The agricultural sector provides large quantities of raw materials for further processing. Based on the major crops produced in Mpumalanga, as discussed in the agricultural section, the area offers a variety of opportunities such as the production of cattle feed, sugar by-products, dog food pellets, bakery and confectionery products, sorghum beer, the processing of sauces, fruit juice production and blending, canning of fruit and vegetables, and the processing of tropical fruit and nuts.

Mpumalanga is home to TSB, one of the largest sugar mills in South Africa, accounting for some 25% of South Africa's total exports of sugar. Opportunities exist to beneficiate this raw material into items such as candy, confectionery and soft drinks.

#### **Agricultural products: Non-food related**

Non-food agro-industrial opportunities evolve mainly around wool, cotton and tobacco. Downstream opportunities include wool washing and combing, spinning and weaving of wool and cotton, lanolin processing, the manufacture of clothing, cigarette and pipe tobacco and snuff, and joint sorting and packaging.

#### **Wood processing**

Wood processing is already a major activity in the Lowveld. There are opportunities for the manufacture of, inter alia, furniture, timber frames, roof trusses, packaging materials, ultraboard, wooden transmission poles, charcoal, paper products, launching of publishing and printing operations and pallet manufacturing.

#### **Biofuels**

A proposed ethanol project, in its entirety, is to take place in the Free State, North West and Mpumalanga provinces. The project proposes the construction of eight new ethanol

plants in these three main maize-producing provinces. The first Ethanol Africa plant is to be built in the Free State. The plants will be operational continuously, seven days a week and more than 10,000 direct and indirect job opportunities could be created by a single plant. The initiative could supply up to 12% of South Africa's fuel needs by 2015. The proposers of the project, Sterling Waterford and Ethanol Africa, have committed to invest R8.75 billion in the project nationwide

Sappi operates the largest paper mills in the Southern Hemisphere, situated outside Nelspruit, in the Ehlanzeni district. As a result, a large resource of paper is available for further beneficiation, such as the production of items such as packaging material, printing and books.

The Sasol fuel from coal producing petro-chemical complex situated in Secunda, in Gert Sibande district, generates some 250 different by-products and feedstock which offer the opportunity for further beneficiation into items such as synthetic rubber, plastics and products thereof, agro-chemicals and so on.

#### **The continued beneficiation of mining, agricultural and forestry raw materials**

As a result of granite and dimension stone mining in the Province, there are opportunities to further beneficiate this natural resource and produce items such as tombstones, and architectural stones for cladding buildings.

The availability of clays creates opportunities to produce ceramic items such as tiles, hollowware and electrical insulators.

As a result of the local cultivation of the above mentioned crops in the Province opportunities exist for the production of items such as fruit juices, concentrates, dehydrated fruit and canned vegetables.

The availability of raw materials such as cotton and wool create opportunities for the beneficiation of these resources into finished products of cotton and wool in the form of textiles and garments.

There are opportunities to further beneficiate the timber from forestry operations and produce items such as furniture, building and construction material such as flooring.

The following major projects are planned for this sector:

**Table 62**  
**Projects underway in Mpumalanga, 2009**

<b>Economic industry sector</b>	<b>District within which project will be</b>	<b>Description of project</b>	<b>Estimated cost</b>	<b>Timing</b>	<b>Owner of project</b>	<b>Contractors</b>
<b>Manufacturing projects</b>						
Columbus Stainless cold-rolling mill capacity expansion project	Nkangala	A new plant to expand downstream cold-rolling capacity, which will allow Columbus Stainless to raise output of higher value-added cold-rolled product. The expansion will extend the mill's capacity by 25%.	Estimated US\$100.6 million, of which the International Finance Corporation (IFC) has been requested to provide US\$50 million in the form of a loan.	end of 2008	Columbus Stainless	
Acrylamide and polyacrylamide plant		The construction and operation of a 20,000t/y world-class plant for manufacturing acrylamide and polyacrylamide, to supply import replacements to the mining sectors in South and Southern Africa.	R380 million	2009	JV between Senmin International (a subsidiary of Chemical Services) and Ciba UK	

### *Finance, real estate and business services*

- No detailed information was available to describe the drivers of this sector in detail.

### *Wholesale and retail*

- No detailed information was available to describe the drivers of this sector in detail.

### *Construction*

The Mbombela stadium, in Ehlanzeni district, will involve the construction of a sports venue for use during the 2010 Soccer World Cup. More detail is given under the heading Tourism, further in this document.

### *Utilities*

Major undertakings are being implemented and planned for Mpumalanga. The table below gives some information on the major projects:



**Table 63  
Projects underway in Mpumalanga, 2009**

Economic industry sector	District within which project will be	Description of project	Estimated cost	Timing		Owner of project	Contractors
				Date of commencement	Date of completion		
<b>Manufacturing projects</b>							
Kusile (formerly Project Bravo)	Nkangala	Comprises the construction, commissioning and operation of a six-unit, greenfield, mine-mouth, coal-fired power plant, with about 4 818 MW of gross output. The project will include a power station precinct, with power station buildings; administrative buildings (control buildings, medical and security); a high-voltage yard; a coal stockyard; coal and ash conveyors; water supply pipelines (temporary and permanent); electricity supply (temporary, during construction); water and wastewater treatment facilities; ash disposal systems; access roads (including haul roads); dams for water storage; and a railway siding and/or a line for the sorbent (limestone) supply. Eskom has signed a letter of intent with Anglo Coal South Africa to supply the Kusile facility, with 17-million tons of coal a year over its 47-year life. Most of the coal is expected to be supplied from Anglo Coal's New Largo mine (mine mouth). The coal	Estimated R111 billion (escalated from a previous R80 billion)	Construction for the civil works for the project will start in January 2009	Commercial operation of first unit in 2013, with the last unit in 2017.	Eskom	Eskom, in partnership with Black & Veatch (project management), Hitachi Power Africa (boiler contract), Alstom (turbine island works), Murray & Roberts (boiler construction contract), Roshcon, a subsidiary of Eskom (terracing contract), and the Kusile Civil Works Joint Venture (JV), comprising Stefanutti Stocks Civils, Group Five Civil Engineering and WBHO Construction. Stefanutti Stocks Civils will lead the JV (main civil works).

**Table 63  
Projects underway in Mpumalanga, 2009**

Economic industry sector	District within which project will be	Description of project	Estimated cost	Timing		Owner of project	Contractors
		will be supplied through Anglo's empowerment subsidiary, Anglo Inyosi Coal, with the first coal supplies expected for delivery in 2011. It is likely that a conveyor system will be developed to transport the coal to the power station so as not to add additional pressures to Mpumalanga's fast-deteriorating road network. Tenders for what could be a R5 billion-plus investment by Eskom into FGD technology for its Kusile power station, are being finalised. The FGD technology, which hitherto has never been deployed in South Africa, will be used to remove sulphur dioxide (SO <sub>2</sub> ) from the exhaust flue gases, in an effort to minimise pollution.					
Vaal River Eastern Subsystem Augmentation Project (Vresap)		Vresap will bring water from the Vaal dam to Secunda, to meet the growing water demands primarily of Eskom and Sasol. The proposed scheme will transfer water through a 121-km-long pipeline from the Vaal dam (near the Vaal marina) to discharge into either the Trichardtsfontein or the Bosjesspruit dams, near Secunda.	R2.5 billion. The project will be funded by the private sector and paid for through tariff charges to Eskom and Sasol	Final quarter of 2008		Trans Caledon Tunnel Authority (TCTA)	TCTA (finance and implementation of the project), Vaal Pipeline Consultants comprising Goba, Ninham Shand, and PD Naidoo & Associates (professional design and supervision

**Table 63  
Projects underway in Mpumalanga, 2009**

Economic industry sector	District within which project will be	Description of project	Estimated cost	Timing		Owner of project	Contractors
							functions), Mpumalanga Pipeline Contractors Joint Venture (JV), which consists of Murray & Roberts, Group Five, WK Pipelines, and the J&J Group (supply and installation of the pipeline), the Chinese Overseas Engineering Corporation and Mathe Construction JV (civils structures, mechanical, electrical and instrumentation, and piping works), Pipetech (independent specialist inspection contract) and the United Valve Company (sleeve valves)
Eskom's return-to-service project		The project involves the demothballing of three coal-fired stations. The Camden power	Estimated R16 billion, a 34% increase on	Underway	2009 to 2011	Eskom	Include, among others, ABB (common plant

**Table 63  
Projects underway in Mpumalanga, 2009**

Economic industry sector	District within which project will be	Description of project	Estimated cost	Timing		Owner of project	Contractors
		station, in Ermelo, was the first of Eskom's three mothballed coal-fired power stations to be returned to service, and was in full commercial operation by August 2008. The Grootvlei power station is near Balfour, and the Komati power station is situated between Middelburg and Bethal.	the original cost estimate.(Camden R5.2 billion, Grootvlei R4.8 billion, Komati R6.1 billion)				switchgear and the switchgear protection), Siemens Building Technologies (control and instrumentation equipment, and installation of fire-detection system), Howden Africa Holdings (the return-to-service and upgrade of the unit 6 precipitators), Stefanutti & Bressan (station control room, battery room and equipment room; refurbishment and upgrading of compressors and compressed-air system), Fluor, in a joint venture with Pangaea (engineering, procurement and construction

**Table 63  
Projects underway in Mpumalanga, 2009**

Economic industry sector	District within which project will be	Description of project	Estimated cost	Timing		Owner of project	Contractors
							management services), Honeywell (distribution control system), Alstom SA (modernisation, refurbishment and replacement of the turbine control and protection system for all six generator units and four steam-feed pump turbines at Grootvlei power station, as well as the retrofitting, refurbishment and upgrade of the gas-cleaning systems for all six generation units at the power station)
Alpha/Eros transmission power line project	Gert Sibande	To strengthen the transmission network supplying electricity to the KwaZulu-Natal Midlands and southern KwaZulu-Natal, Eskom is proposing to construct new transmission lines over a total distance of 470 km in a number of continuous sections from the Alpha	Not known	Not known, assessment being conducted		Eskom	

**Table 63  
Projects underway in Mpumalanga, 2009**

Economic industry sector	District within which project will be	Description of project	Estimated cost	Timing		Owner of project	Contractors
		substation to the Majuba substation near Amersfoort, in Mpumalanga, and from there to Harding, in KwaZulu-Natal.					
Project Lima		The construction of a large pumped-storage scheme along the escarpment between the Nebo plateau and the Steelpoort river valley, in Mpumalanga.	Not known		2014	Eskom	
Gas compression station project (Mozambique and South Africa)	Ehlanzeni	The gas compression station will be established at Komatipoort, to facilitate a 20% expansion of natural gas delivery from Mozambique to South Africa. Two gas-turbine-driven compressor units, and ancillary equipment, will be used at Komatipoort to increase gas flow rates in Rompco's 865-km-long transborder pipeline that transports the natural gas from the Pande and Temane gas-field, in Mozambique, to Sasol's operations at Secunda and Sasolburg. The additional gas will be used as part of the first phase of a planned 20% expansion of Sasol Synfuel's capacity at Secunda over the next eight years.	R1.1 billion	Mid-2008	End of 2009	Sasol (50%), iGas (25%) and Compania Mozambicana de Gasuduto (25%), as joint partners in the Republic of Mozambique Pipeline Investment Company.	Foster Wheeler
Sasol gas-fired power plant	Gert Sibande	A cogeneration project to build a 280-MW gas-fired power station at	R2.5 billion	Not known	Not known	Sasol	

**Table 63  
Projects underway in Mpumalanga, 2009**

Economic industry sector	District within which project will be	Description of project	Estimated cost	Timing		Owner of project	Contractors
		its Secunda plant. The power plant will eventually use mainly flare gas, but will be commissioned with natural gas supplied from its operations in Mozambique.					
Arnot power station capacity increase project (ACIP)	Nkangala	The project involves the extensive refurbishment of the Arnot power station	R1.48 billion	Not known	2010	Eskom	Alstom, Howden, Sulzer, VWS Envig, Rotech and Steinmuller
Matla power station upgrade	Gert Sibande	The upgrade includes the replacement and refurbishment of all control systems and instrumentation in the 3 600-MW coal-fired power plant.	Estimated R617 million	Not known	2014	Eskom	ABB

Source: Creamer Media; company websites; BMI-T, 2009

*Transport*

The following projects are planned for the transport industry:

Table 64 Projects underway in Mpumalanga, 2009							
Economic industry sector	District within which project will be	Description of project	Estimated cost	Timing		Owner of project	Contractors
				Date of commencement	Date of completion		
<b>Transport projects</b>							
Majuba railway siding project	Gert Sibande	The project entails the construction and commissioning of a 68.7km, 26-t/axle railway line linking the Majuba power station rail siding and tippler with Transnet Freight Rail's export coal line, west of Ermelo. The complete transport system will include a new rail yard layout at Majuba, as well as modifications and upgrades to the existing tippler and conveyor load-out system.	Estimated R1.8 billion, to be financed by Eskom	Not known	Late 2011	Eskom	Not yet appointed



**Table 64  
Projects underway in Mpumalanga, 2009**

Mozambique-South Africa pipeline project	Ehlanzeni	The construction of a liquid petroleum pipeline from the border of Mozambique at Komatipoort, to Kendal, through Nelspruit. The pipeline will run from an existing coastal fuel-storage facility at Matola harbour, in Mozambique, to the Nelspruit area, where an inland storage depot will be constructed, complete with rail-and-road offloading infrastructure. The pipeline will then continue to Kendal, where it will potentially join the current Transnet Pipelines (formerly Petronet) petroleum pipeline network, for inland distribution of the petroleum product.	Estimated R4.2 billion		2010	Petroline RSA will implement the project in a 50:50 joint venture with Petroline SARL of Mozambique. Petroline RSA has four main shareholders - Woesa Consortium, Gigajoule International, Petróleos De Moçambique, and Companhia De Desenvolviden to De Petroleo Moçambique SARL.	National Energy Regulator of South Africa (construction licence)
Moloto Rail Corridor development initiative	Nkangala	The project will include rail, road and transfer facilities to provide an integrated transport link between Gauteng and Marble Hall, Mpumalanga, aimed at reducing travel time, improving safety, and affordable travel options for commuters. The project will make use of a wider-gauge railway line, similar to the Gautrain, which means that it will be able to accommodate high-speed trains. An Accelerated and Shared Growth Initiative of South Africa (AsgiSA) project, it is also one of Mpumalanga	R9.7 billion	Not known. Approved by parliament March 2008.	2013	National Department of Transport and the Gauteng and Mpumalanga provincial governments	Not yet appointed

**Table 64**  
**Projects underway in Mpumalanga, 2009**

		government's five Flagship projects.					
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Source: Creamer Media; company websites; BMI-T, 2009

## *Tourism*

With its rich array of natural features and scenic beauty, Mpumalanga is a prime destination in South Africa for foreign and domestic tourists alike. The Kruger National Park is a popular destination for foreign visitors. Mpumalanga is also very popular among domestic tourists. They represent the overwhelming majority of the more than 700,000 visitors annually to the Kruger National Park, Mpumalanga's single largest attraction.

The tourism potential of the province is fairly well developed, but the rapid growth in tourism expected in the Lowveld in particular makes large-scale investment in tourist facilities a must. The recent establishment of casinos in Nelspruit, Witbank and Secunda will further enhance the tourism industry. There are several tourist investment opportunities in the province including the creation of accommodation, tourist attractions and entertainment facilities as well as the development of rural, adventure and agricultural tourism.

An increasing part of tourist traffic will be composed of the new middle class black communities, which has important implications for tourism product development and marketing by the province.

The Mpumalanga Tourism Association has divided the province into seven tourist regions, each with their own themes, colours and logos, and in these regions tourism routes were identified and developed by the Route Road Development Project. A number of key tourist attractions within these regions can be identified: the grass and wetlands (a birding regions with historical ruins); the cultural heartland (promoting the Ndebele culture); cosmos country (producing the late summer blooms of the cosmos flowers); the highlands meander (boasting fly-fishing, birding and spectacular scenery); the Panorama (within which lies God's Window, the third largest canyon in the world); lowveld legogote (housing the oldest dolomite caves, and butterfly gardens); and the wild frontier (boasting historical towns and sites of archaeological findings).

The Mpumalanga Investment Initiative estimates that more than R1bn has been invested in the sector in the past decade.

The Mpumalanga Provincial Government has identified the establishment of an ICC and hotel in the Mbombela area as a priority project. MEGA (Mpumalanga Economic Growth Agency) put out a tender in February 2009 for a Transaction Advisor to ensure that the ICC develops the maximum economic benefits to the regional economy, and to initiate a feasibility study.

### **2010 World Cup**

The Mbombela stadium will have 45,000 seats, with 25,000 permanent seats, while 20,000 seats will be installed for the duration of the World Cup. As at February 2009, the stadium is reported to be 70% complete. Construction began in May 2008, and is expected to be completed by July 2009, at a cost of R875 million. The management of the project was awarded to Platinum Sport Consulting, and Lefika Emerging Equity was appointed to design the stadium. Storm damage at the beginning of 2009 caused damage to the structure and delayed the project by about a month.

In March 2009, the Mbombela Local Municipality invited proposals under tender 93/2008 to provide a long-term loan for capital expenditure on property, plant or equipment, for the funding of the 2010 World Cup Stadium precinct plan projects.

The Matsafeni community (Mdluli Clan) is the beneficiary of a successful land claim. The Mbombela Local Municipality has chosen this Matsafeni Trust Land for the development of the 2010 soccer stadium. The stadium will be built in Matsafeni behind the Mpumalanga Parks Board offices.

### *Agriculture*

Storage dams in the Lowveld rivers in particular will step up the production of sugar, subtropical fruit and vegetables, and the reopened Maputo harbour is encouraging exports of agricultural crops. Added to this, the domestic demand for food crops will be stimulated by the continuing vigorous growth rate in the province. Overall there is considerable potential for increased agricultural production and agro-processing in Mpumalanga.

### *Forestry*

Enormous opportunities exist to develop the renewable forest resource that has been developed, especially with regard to downstream value addition and remanufacturing activities. Ongoing BEE programmes, particularly by SAFCOL, the parastatal, are seeing the ownership and operation of forestry resources move into previously disadvantaged hands.

The Micro Agricultural Finance Institutions of South Africa (Mafisa) was launched by Dwaf in 2005 in three municipalities in three provinces. It is designed to align the national programmes with provincial programmes and budgets. By mid-2006, officials from the Department of Agriculture were training extension officers during workshops so that the rollout of Mafisa could be expanded in the pilot provinces. Retail agreements with development-finance organisations such as Uvimba in the Eastern Cape, Ithala in KwaZulu-Natal and the Mpumalanga Agricultural Development Corporation were being finalised and a number of loans had been processed. In Limpopo, R34,834 million was disbursed through 236 loans, in the Eastern Cape R2,153 million was disbursed through 51 loans, and in KwaZulu-Natal 1,000 applications for loans to the value of R8 million were received.

### *Health*

The distribution of health facilities, both public and private, in the districts of Mpumalanga, is shown in the table below.

<b>Table 65 Hospitals and clinics in Mpumalanga by district</b>				
	<b>Gert Sibande</b>	<b>Nkangela</b>	<b>Ehlanzeni</b>	<b>Mpumalanga total</b>
Private hospitals	3	3	2	8
Clinics	60	65	106	231
CHC	9	15	12	36
Mobile services	27	21	28	76
Satellite clinics	5			5
District hospitals	8	7	8	23
Regional hospitals	1		2	3
Provincial tertiary hospitals		1	1	2
National central hospitals				0
Specialised hospitals	3	1	2	6

Source: BMI-T 2009, Health Systems Trust SA Health Review 2008

Approximately 11.2% of Mpumalanga's population is covered by medical aid, well below the national average of 13.7%.

### Education

Mpumalanga has the fifth biggest contingent of school learners in South Africa. The table below shows the size of the schools education sector.

<b>Table 66</b>				
<b>Number of learners, educators and schools in the ordinary school sector in Mpumalanga, 2008</b>				
	<b>Public schools</b>	<b>Independent schools</b>	<b>Total</b>	<b>% of national total</b>
Learners	1,034,719	16,812	1,051,531	8.6
Educators	32,784	860	33,644	8.4
Schools	1,873	86	1,959	7.6

Source: Department of Education School Realities 2008; BMI-T, 2009

Of the public schools in the province, 64.1% are primary schools, 13.7% are combined schools and 22.2% are secondary schools.

The NEIMS report, released by the national Department of Education in 2008, gives the number of public schools, learners and educators per district. It can be inferred from the table below that Ehlanzeni has a much larger proportion of the learners in the province, and a marginally higher ratio of learners to educators.

<b>Table 67</b>			
<b>Percentage of ordinary public schools in Mpumalanga in each district</b>			
	<b>Operational ordinary public schools</b>		
	<b>% of schools</b>	<b>% of learners</b>	<b>% of educators</b>
Ehlanzeni	40.4%	48.1%	46.8%
Gert Sibande	30.6%	24.7%	24.4%
Nkangala	29.0%	27.2%	38.8%
Mpumalanga	100.0%	100.0%	100.0%
n=	1,981	1,050,191	30,362

Source: NEIMS report 2007; BMI-T, 2009

Overall in the province, the ratio of learners per educator is reasonable, with 58.5% of public schools having 30-45 learners per educator, and only 6.8% of the schools having over 45 pupils per teacher.

In 1549 schools (78.2%) more than 10% of the educators do not have desks from which to work, and in 1167 schools (58.9%) more than 10% of the children are without desks.

In 2007, 16.0% of the public schools had no source of electricity, while the others, with one exception dependent on solar power, were all connected to the Eskom grid. The NEIMS report estimates that 4.8% of schools do not have any access road, and 40% suffer from regular vandalism of their premises and assets. Only 6.2% of the schools have an operational library and 1.3% have a working laboratory.

There is no university in Mpumalanga. According to the National Register of Private FET Colleges, there were only two colleges registered in Mpumalanga in 2009, the Kingsbury International College SA, in Middelburg and the Little Seeds Training college in White River.

### Levels of education in Mpumalanga

The adult literacy rate in Mpumalanga was 81.5% in 2006, well below the official national average of 87.5%. About 17.9% of people aged 20 years or older in the province have never attended school, while only 2.2% of that age group have achieved a university degree.

The map below illustrates the distribution of adults (persons over the age of 20) with disparate levels of education throughout the province. It can be clearly seen that the Gert Sibande District has the lowest level of education amongst its residents.

According to the 2007 NEIMs report, 46.8% of schools in the province are dependent on a cellphone only for communication, while 49.4% have a landline connection.

<b>Table 68</b>				
<b>Computers for teaching and learning in Mpumalanga schools, by district</b>				
	<b>No of operational ordinary public schools</b>			
	<b>&lt; 100 learners per computer</b>	<b>&gt;= 100 learners per computer</b>	<b>No computers</b>	<b>Total</b>
Ehlanzeni	110	156	534	800
Gert Sibande	78	85	444	607
Nkangala	99	167	308	574
Mpumalanga	290	408	1283	1981
	<b>% of operational ordinary public schools</b>			
	<b>&lt; 100 learners per computer</b>	<b>&gt;= 100 learners per computer</b>	<b>No computers</b>	<b>Total</b>
Ehlanzeni	13.8	19.5	66.8	100.0
Gert Sibande	12.9	14.0	73.1	100.0
Nkangala	17.2	29.1	53.7	100.0
Mpumalanga	14.6	20.6	64.8	100.0

Source: NIMS report; BMI-T, 2009

## **12. ICT SITUATIONAL ANALYSIS**

### **South African current situation**

The South African telecommunications regulatory environment can be defined as being in the "second wave of sector reform", a stage that is normally characterised by a more vigorous move towards greater sector liberalisation. Over the past few months there have been significant movements with regards to the implementation of the Electronic Communications Act (hereafter referred to as "ECA"). Licenses for incumbent operators were converted to ECNS and I-ECNS, and on the 16 January 2009 through Government Gazette No. 31803 the regulator announced the completion of the entire licence conversion process well ahead of 19 January 2009 deadline set in the ECA.

Many of the outstanding liberalisation objectives, which are embodied in the ECA, are being addressed, and during 2008 Icasa issued no less than 10 draft regulations for discussion. 2009 will be no less significant regarding implementation of some of the regulations, although it will probably take a year or more to implement them all.

A significant development in the market has been the Pretoria High Court's ruling that service providers formerly classified as Value-Added Network Services (VANS) can self-provide facilities; this after Altech had taken Icasa and the Department of Communications to court on the issue as the VANS licences were being converted by Icasa into I-ECNS licences. Even though this is a significant victory towards further market liberalisation, there remain doubts on both the financial ability and the will of most of these companies to roll-out a significant network infrastructure of their own. What remains critical is the finalisation of wholesale pricing and essential facilities regulations so as to enable those that remain primarily ECS players to access the facilities of the incumbents at more favourable rates than those currently experienced in the market. Even when they do achieve the benefits of wholesale pricing, based on global experience facilities based competition is regarded as being a far more effective driver of achieving higher levels of competition in the market, with corresponding levels of cost reduction. Mobile Value Network Operators (MVNO's) can also benefit from services-based competition enablers. Currently the impact of MVNO's in the market is not that significant as they are constrained by the prohibitive wholesale rates.

The level of competition is slowly improving depending on the service being offered. Broadband services proliferated with corresponding price decreases, with the trend set to continue in 2009. Neotel launched their consumer offerings for broadband and they have been followed by Telkom with their new "Do 3G" services over W-CDMA technology. Importantly, both operators were able to pitch their services at significantly low prices. Competition on voice services is also on the increase with all the major mobile operators having launched packages and tariffs that offer considerable discounts across all networks. Another trend that is emerging is that of market consolidation as evidenced by the mergers and acquisition activity that has characterised the market in the last twelve months. Market leaders' desire to consolidate market share is the primary driver for this. Most of the acquisitions that have taken place have ended up being challenged by other players and the Competition Commission has been kept busy presiding over appeals.

One major activity that remains problematic in the market is that of frequency spectrum allocation. Icasa has published guidelines on how they will go about the process which includes conditions such as that qualifying operators and service providers will have to be at least 51% BEE owned. This has led to an outcry from stakeholders and, if pursued to conclusion, could lead to companies (the former VANS) with newly acquired I-ECNS licences being disposed of to BEE consortia.

There is also a strong likelihood of heightened participation in the local market by international entrants, for example Zain has shown an interest in entering the local market, and British Telecom is expanding its presence here.

Other key trends include the advent of competition on international submarine cables, national long distance fibre backbones and metro networks, with Neotel already playing a key role at all three of these levels. Metro fibre competition is also being stimulated by the appearance of private sector player Dark Fibre Africa, which is seeking to achieve critical mass in signing up multiple licenced service providers on routes in which it is deploying ducting.

## **Market convergence**

Traditionally service providers have been employing different types of networks to deliver voice, video and data. Technological developments have led to a convergence of voice, data, and video technologies, paving the way for convergence of services and industries and markets.

There is no universal definition of convergence, according to the ITU, but it is generally understood to mean “the ability of different networks to carry similar kinds of services (e.g. voice over internet protocol or over circuit switched networks, video over cable television or ADSL) or, alternatively, the ability to provide a range of services over a single network, such as the so-called ‘triple-play’”.<sup>7</sup>

In developed as well as developing countries legislators and regulators in the telecommunications and media sectors are grappling with the disappearance of the strict borders between telecommunication, information technology and media. Convergence poses challenges to both the structure of regulatory bodies and the instruments they use due to the blurring of boundaries between sectors. For example, the responsibility for overseeing content has traditionally been that of broadcasting regulators, but the proliferation of broadband and the digitisation of content now bring this also within the domain of telecommunications operators.

Internationally, policymakers and regulators are responding to the challenges posed by convergence by, firstly, shifting towards a technology-neutral regulatory treatment of different information and communications infrastructure which involves the modification of the licensing regime. South Africa has followed suit.

Secondly, the structure of regulatory authorities is being modified, providing them with the authority to regulate the telecommunications, broadcasting and information technology sectors. Finally, governments are drafting and implementing new laws and regulations to create the necessary legal framework to support an information and communication technologies (ICT) sector. These laws and regulations typically deal with such issues as intellectual property, content, data protection, security and computer crime.<sup>8</sup>

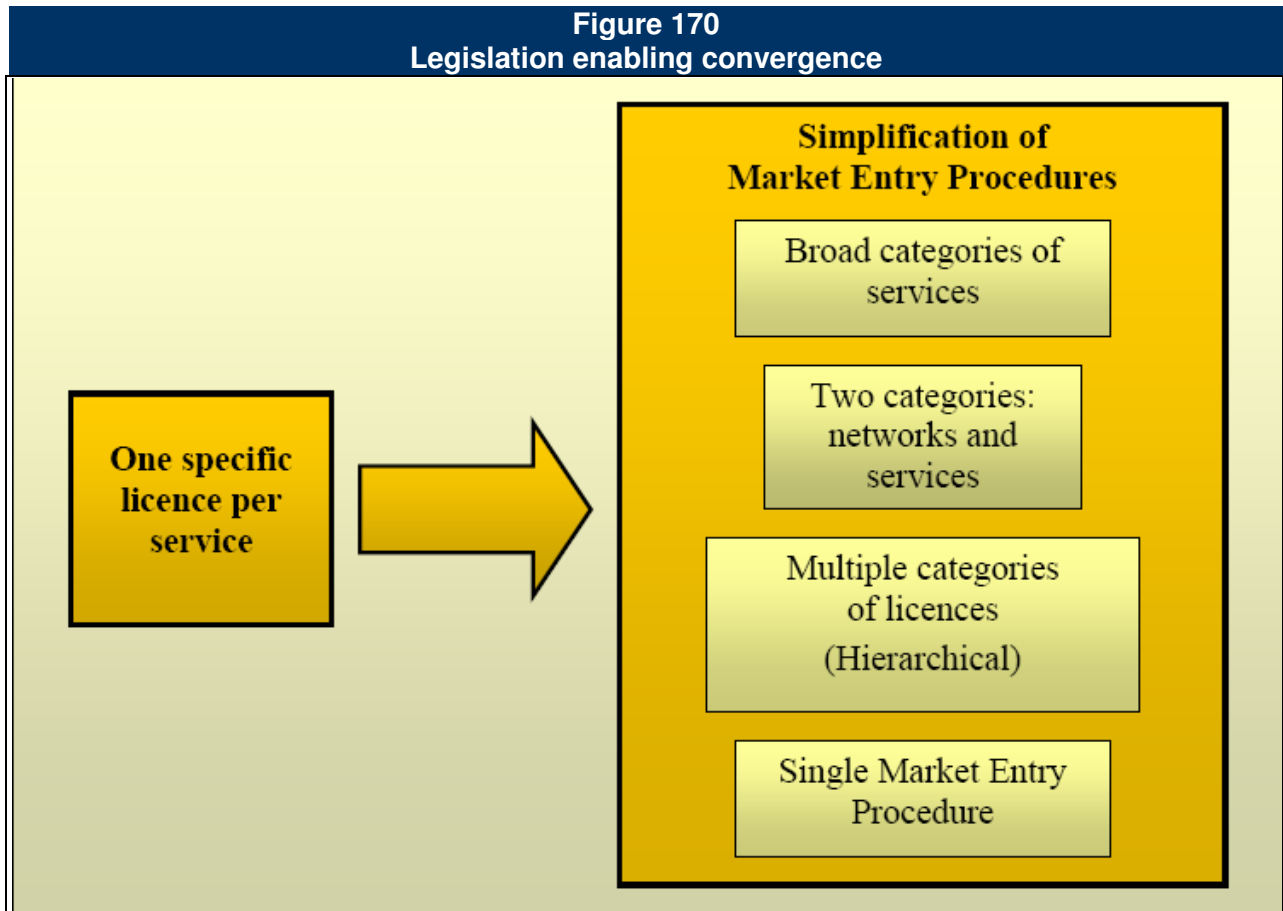
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<sup>7</sup> infoDev & International Telecommunications Union (ITU) (2008)

<sup>8</sup> infoDev & International Telecommunications Union (ITU) (2008)



Figure 1 below represents a legislation framework that enables convergence.



Source: Telecommunication Management Group Inc, 2006

### *Electronic Communications Act licensing framework*

The Electronic Communications Act came into effect on the 19th of July, 2006.

The South African government published a Convergence Bill in February 2005, providing a licensing and regulatory framework for a converged telecommunications, broadcasting and information technology industry. The Bill was renamed the Electronic Communications Act No. 36 of 2005 and came into effect on 19 July 2006, thereby effectively repealing the Telecommunications Act of 1996. The aim of the ECA is to introduce a technology-neutral, converged service-based licensing regime, as opposed to the previous network infrastructure-based regime.

The ECA defines new categories of licences; sets out rules and guidelines for licence applications, licensee obligations, and the construction of communications networks; provides for interconnection between licensees and facilities leasing by communications network services licensees; provides for a radio frequency plan, a numbering plan to enable number portability, and carrier pre-selection; specifies type approval and technical standards for communications equipment; embraces the concept of significant market power; and provides for the Universal Service Agency and Universal Service Fund (renamed the Universal Service and Access Agency of South Africa (USAASA) and the

Universal Service and Access Fund (USAF)) to continue to bring services to remote locations and historically disadvantaged people.

The ECA recognises two generic licence categories for communications infrastructure services:

- Electronic Communications Network Services (ECNS), which entail the right to operate a network, whether it be a telecommunications or broadcasting signal distribution network.
- Electronic Communications Services (ECS), which involves the right to provide connectivity over a network (but not to operate any physical infrastructure).

The ECA replaces the concept of “major operator status” with that of “significant market power” (SMP) in a market segment and empowers Icasa to impose pro-competitive conditions on operators found to have significant market power. The definition of SMP is currently under review and Icasa is in the process of compiling the required economic analysis that divides the telecommunications sector into specific markets and names the dominant players in these markets. The concept of SMP is already applied to new telecommunications regulations, based on the market share of the major players.

### **Licensing**

In an Industry briefing held in May 2008, the regulator pointed out that there would be three licences as follows:

- BS / ECS Licence
- ECNS Licence
- RFS Licence

The ECA provides that Icasa may prescribe a framework for the unbundling of Telkom’s local loop. In 2006, the Minister appointed a local loop unbundling committee to investigate and recommend appropriate models and processes for the unbundling of the local loop. The committee subsequently made policy and regulatory recommendations to consider the best model for a successful local loop unbundling process. The Minister of Communications then issued a policy directive that the unbundling process be completed by 2011. Icasa recently issued an invitation to tender for service providers to assist the regulator in drawing up regulations and in planning the introduction of local loop unbundling. BMI-T does not expect LLU to be the silver bullet that will enhance competition, being both extremely difficult to implement, and there being the possibility for incumbents to thwart its real impact, unless preceded by substantial and effective infrastructure competition.

### **Policy and regulatory background**

The past decade has witnessed a period of significant market liberalisation, competition, technological change and restructuring in the telecommunications sector worldwide. Among the major drivers of this change are wireless technology, internet protocol (IP) technology, and the convergence of media, computing and telecommunications. The South African telecommunications market has not been insulated from the above trends, and has

witnessed an industry shift in both the policy and competitive landscapes, and these changes have in the past one and half years gathered momentum as the regulator, Icasa, aims to liberalise the industry and increase competition.

Key milestones towards the liberalisation of the sector are outlined in Table 1 below:

<b>Table 69 South Africa: Progress with telecommunications sector liberalisation</b>	
Year	Development
1991	Incumbent fixed line operator, Telkom, established.
1993	First mobile operator, Vodacom, licensed.
1994	Second mobile operator, MTN, licensed. Open up Vans and customer equipment market
1996	Enactment of Telecommunications Act of 1996. South African Telecommunications Regulatory Authority (SATRA) created.
1997	WTO basic telecommunications agreement signed by SA. Committed to opening up the telecommunications sector to competition by 2007 Telkom partially privatised through sale of 30% share.
2000	ICASA Act 13 tabled. Independent Communications Authority of South Africa (ICASA) created as the telecommunications and broadcasting regulator through the merger of SATRA and the Independent Broadcasting Authority (IBA).
2001	Third mobile operator, Cell C, licensed.
2002	End of Telkom's exclusivity period (in theory - Neotel only gets SEP and licensed in 2005). Draft regulations issued by Icasa. International carrier of carriers licence and multimedia licence awarded to Sentech.
2003	Telkom privatised further with listing of 20% of government's share on JSE and NYSE.
2004	3G licences awarded to Vodacom and MTN. ICASA granted seven licences to USALs (Under-Serviced Area Licensees).
2005	Draft Convergence Bill published for public discussion. Restrictions on VoIP lifted. SNO, Neotel, licensed.
2006	Electronic Communications Act (ECA) (previously known as Convergence Bill) enacted, repealing the Telecommunications Act of 1996 and introducing a converged technology-neutral licensing regime. Mobile number portability implemented. Neotel commences providing wholesale backhaul and voice gateway services.

Table 69 South Africa: Progress with telecommunications sector liberalisation	
Year	Development
2007	<p>Another seven USAL licences granted.</p> <p>Neotel commences providing retail voice and data services to corporate customers</p> <p>Minister determines that local loop unbundling process must begin immediately and must be completed by 2011</p> <p>Minister directs Icasa to urgently prescribe a list of essential facilities, and facilitate access by other operators to SAT-3 submarine cable landing stations controlled by Telkom.</p>
2008	<p>Icasa issues for discussion 10 draft regulations mostly on competition and markets.</p> <p>Incumbent operator's and other service providers licences converted to I-ECNS and ECNS</p> <p>ICASA issues a Government Gazette confirming VANS licences would be converted to ECNS and I-ECNS licences.</p> <p>Broadband Infraco becomes as stand-alone state-owned enterprise.</p>

The industry shift towards convergence and the emergence of IP networks for delivery of telecommunications services prompted the South African authorities to re-think the structure and relevant policies necessary to regulate the changing industry landscape.

As a result of the above, the South African government published the Convergence Bill in February 2005 providing a licensing and regulatory framework for a converged telecommunications, broadcasting and information technology industry. The Bill was renamed the Electronic Communications Act No. 36 of 2005 (ECA) and eventually came into effect on the 19th of July 2006. The objects of the act are, inter alia, to promote the convergence of telecommunications and broadcasting sectors, promote investment and innovation, and also to encourage competition in the sector.

In essence, convergence legislation aims at moving regulation away from being technology specific to being technology neutral.

### ***Institutional framework***

Currently the South African communications policy and regulatory environment has a wide variety of role players, namely:

- The Department of Communications (DoC) together with the Ministry of Communications. The core functions of the DoC as espoused in their website are:
  - To develop ICT policies and legislation that stimulate and enhance the sustainable economic development of the South African 1st and 2nd economy and positively impact on the social well being of all our people
  - To evaluate the economic, social and political implementation impact, outcomes and processes of the said policies
  - To exercise oversight on State Owned Enterprises (SOE's)

- To fulfill South Africa's continental and international responsibilities in the ICT
- The Ministry plays an active role in regulatory matters in terms of the Ministers Determinations powers, although this role has diminished in the new legislative dispensation (ECA and Icasa Amendment Act).
- Other government arms, including the Department of Finance, the Department of Trade and Industry, the Department of Public Enterprises, and the parliamentary portfolio committee on communications – which have all had a significant role in decision-making at top level. Notable interventions in the recent past include the licencing and funding of Broadband Infraco.
- The regulator, the Independent Communications Authority of South Africa (Icasa), was established in 2002 in terms of the Icasa Act no. 13 of 2000. It took over the functions of the two previous regulators, the Independent Broadcast Authority (IBA) and the South African Telecommunications Regulatory Authority (SATRA). The two bodies were merged to form Icasa in order to facilitate effective and seamless regulation of telecommunications and broadcasting, and to accommodate the convergence of technologies. The Icasa Act was amended by the Icasa Amendment Act No. 3 of 2006.
- Competition authorities, namely the Competition Commission and Tribunal. In 2001 there was an extension of the jurisdiction of the Competition Commission, which regulates competition in industry generally under the Competition Act, to include telecommunications and state enterprises. In the case of telecommunications, the Commission typically deals with competition issues that cannot be resolved by Icasa. The two regulators have worked hard at maintaining a good relationship in order to ensure effective competition in the telecoms market, however, the Commission is beginning to flex its muscles far more than before in the telecommunications arena.
- Currently the ECA empowers Icasa to preside over competition issues in the sector, leading to what is termed "concurrent jurisdiction" as Competition matters are the preserve of the Competition Commission. In his June 2008 Budget Vote speech, the Deputy Minister of Communications announced that the (EC) Act will soon be amended to allow the Competition Commission to have the final say on competition matters within the ICT sector.
- The Universal Service and Access Agency of South Africa (USAASA), as renamed by the ECA, is also charged with the administration of the Universal Service and Access Fund. This fund is likely to be of key significance in future for any success to be achieved in addressing the market access gaps in the underserved areas.

### ***Acts shaping the market***

#### *The Electronic Communications Act no. 36 of 2005*

One of the intentions of the ECA is to introduce a new technology-neutral licensing regime in South Africa, which results in the distinction between broadcasting and telecommunications, to a large extent, falling away under a single, converged environment. By changing the market structure from a vertically integrated, infrastructure

based market structure, to a horizontal service based, technology neutral market structure means a number of separate licences will be issued for different areas.

The Act aims to stimulate competition, particularly through the introduction of the concept of significant market power, and will have an impact on price controls, terms and conditions of access, interconnection and facilities leasing. Fair pricing across the fixed-line, mobile and Internet streams is expected to raise the levels of telecom service uptake. It clarifies the roles of Icasa and the Minister of Communications in policy development, licensing and regulations. Thus the main aspects addressed by the ECA are the:

- policy making powers of the Minister of Communications;
- regulation making, licensing and radio frequency spectrum control powers of Icasa;
- licensing framework for communications and broadcasting services;
- power of Icasa to intervene where special market conditions exist, such as significant market power or essential facilities;
- obligations of licensees to interconnect and lease communications facilities, and the powers of Icasa to enforce such obligations; and.
- transitional provisions to address the conversion of existing licences to the new licences envisioned in the ECA.

The Act defines new categories of licences; sets out rules and guidelines for licence applications, licensee obligations, and the construction of communications networks; provides for interconnection between licensees and facilities leasing by communications network services licensees; provides for a radio frequency plan, a numbering plan to enable number portability, and carrier pre-selection; specifies type approval and technical standards for communications equipment; embraces the concept of significant market power; and, provides for the Universal Service Agency and Universal Service Fund (renamed the Universal Service and Access Agency of South Africa (USAASA) and the Universal Service and Access Fund) to continue to bring services to remote locations and historically disadvantaged people. The Act has effectively repealed the Telecommunications Act of 1996.

The ECA should provide for a more rapid deployment of new converged offerings. The traditional boundaries between telecoms and broadcasting have been eroded, resulting in increased collaborations across platforms, lowering costs and accelerating delivery of services.

### ***The Icasa Amendment Act No. 3 of 2006***

The Icasa Amendment Act was signed into law on the 15 June 2006, and gazetted on the 22 June.

The law, which governs the telecommunications, broadcasting and postal regulator, Icasa, had to be changed in order to bring it into line with the ECA, which replaced the Telecommunications Act and sections of the various broadcasting laws.

The object of the Act is to establish an independent authority to regulate broadcasting and electronic communications (and postal matters) in the public interest.

## ***The Competition Act No. 89 of 1998***

The provisions of the Competition Act are enforced by three separate agencies: the Competition Commission, the Competition Tribunal, and the Competition Appeal Court.

From a global perspective, competition authorities have been given an enhanced role in the communications sector as competition has developed. In South Africa, the ECA upholds the right of the Competition Act to regulate competition in the Telco environment, however, jurisdictional ambiguity between the Competition Commission and Icasa is hampering effective regulation, particularly from an anti-competitive behaviour point of view. The Competition Commission regulates and investigates mergers and anti-competitive behaviour, defines markets, "harm" and barriers to entry, while Icasa deals with core market structures in the telecoms industry.

Both bodies have inherent skills: Icasa has good market knowledge, and the Competition Commission has competition theory, and economic and market structure knowledge. While some ambiguity over jurisdiction still exists, at the moment there appears to be no solution, although one way of managing such an overlapping of responsibilities is to assign different roles to the regulator and the Commission. If the two bodies can work effectively together, the resultant impact on increasing the levels of competition in the market will be significant.

The next 12 months will be particularly challenging for the regulator as it moves towards finalising and implementing most of regulations that are currently in draft form and under discussion. Further delays on regulations such as spectrum allocation, interconnection pricing, facilities leasing, carrier-preselect, local-loop unbundling, and wholesale pricing will only serve to promote the status quo and no meaningful changes in the competitive landscape of the industry will be observed.

As most of the regulations impact on market and competition issues, it is highly likely that their implementation will launch a flurry of protests and even litigation from industry players that will be negatively affected by these regulations. Already the signs are there for protracted battles over some of the regulations, with a prime example being Vodacom's successful court interdict to stop regulations involving handset subsidies and contracts. Another example is the protest by Telkom on SAT-3 being classified an essential facility.

### **Universal access**

The Universal Service and Access Agency of South Africa (USAASA) is responsible for the administration of the Universal Service and Access Fund (USAF). Operators are mandated to contribute 0.2% of annual revenue of licensed activities to the fund.

To address the telecommunication needs of isolated, rural communities comprising of historically disadvantaged people, the concept of Under-Served Area Licensees (USALs) was developed. These operators are licensed to provide voice and data services in underserved rural districts with less than 5% fixed teledensity. In 2004, Icasa granted seven licences to USALs, and in December 2007, seven more were licensed, bringing the total number of USALs to 14. Given that the seven new USALs were licensed under the ECA, rather than as USALs as defined by the Telecommunications Act of 1996, they were granted ECNS licences, which allow them to build their own networks.<sup>9</sup> In May 2007, the Communications Minister directed Icasa to implement the merger of all licensed USALs so there is only one such entity in each province. These merged entities are to be called

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<sup>9</sup> Senne (2008a)

Pusanos;<sup>10</sup> however, there is industry resistance to this concept and it remains to be seen whether this will actually be implemented, and BMI-T does not believe that it will be any more successful than the existing USAL model.

### **Voice market liberalisation**

On 1 February 2005, the South African government, through the DoC and Icasa, lifted restrictions imposed on ISPs and VANS to provide voice services.

However, these VoIP providers were apparently still required to use the facilities of a licensed telecommunications operator, after Minister Casaburri clarified her determination shortly thereafter, saying that VANS were not allowed to self-provide facilities. They could, however, apply for non-geographic numbering and interconnection with other operators. The regulator also has to consider QoS issues and access to emergency services. Under the new ECA, service providers that were formerly classified as VANS may now have their licences converted to I-ECS and I-ECNS licences. As such, they will be entitled to access to geographic numbers (and number portability), and some may also take advantage of carrier selection, if they have procured bulk capacity on national long distance backbone facilities of players like Telkom and Neotel. However, BMI-T believes that Neotel is likely to be the major beneficiary of these competition enablers in the voice market, and the alternative voice market is likely to remain focused on fixed-to-mobile least cost routing off various descriptions and hybrid VoIP/LCR, as described in the next chapter.

### **Numbering and number portability**

In 2006, a revised numbering plan was accepted, which introduced a ten-digit national number format, moving away from the previous seven-digit regime. Icasa also opened up the 072, 073 and 074 number ranges to the mobile operators, with the prefixes of 08 and 07 earmarked for mobile services in South Africa.

Mobile number portability (MNP) was launched in South Africa in November 2006, with little impact on the market. The intention is that number portability will eventually be extended to the fixed line market. The two fixed line operators, Telkom and Neotel, are already testing systems for the implementation of block number portability, to make geographic number portability (GNP) a reality. The operators are also developing an ordering system specification that will see them implement individual geographic number portability.<sup>11</sup>

### **ADSL regulations**

In 2006, Icasa released ADSL regulations that introduced the provision not to cap local bandwidth. Between 2002 and 2005, ADSL users in South Africa had uncapped and unlimited access to local bandwidth, but hard capping was introduced due to exploitation of bandwidth by some users.<sup>12</sup> In terms of Icasa's ADSL regulations, subscribers that have reached the monthly cap are allowed to top up their monthly cap without the need to purchase a new user account. In addition, local bandwidth usage is not allowed to be subject to the cap. Telkom, Neotel and ISPs also have to guarantee minimum broadband speeds to the ADSL service, which means a minimum download speed of 256 kilobits per second.

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<sup>10</sup> Senne & Jones (2007)

<sup>11</sup> Senne (2008b)

<sup>12</sup> ITWeb (2007)



## **Policy and regulatory dynamics**

The regulatory environment in South Africa is fast gaining speed and can be said to be in what is termed "the second wave of sector reform", a stage that is normally characterised by a more vigorous move towards greater sector liberalisation. Amongst others, issues such as local loop unbundling, liberalisation of international gateways and essential facilities sharing all become a major focus and a priority for the regulator.

### ***Spectrum licensing and availability***

Spectrum licensing has become a thorny issue in the industry due to the scarcity of the resource and the high demand for it from various players. Icasa has been grappling with deciding just how they should equitably allocate this resource. The authority has identified two bands where demand exceeds the available bandwidth and these are the 3400-3600 MHz (3.5GHz) and 2500-2690 MHz (2.6GHz), i.e. those licenced spectrum bands that are typically associated with WiMAX deployment.

Empowered by Chapter five of the ECA, early in 2007 Icasa embarked on a spectrum usage exercise that was meant to audit organisations that have been allocated spectrum to ensure that they were using it. The biggest demand is that of the above-mentioned 'WiMAX spectrum'. Icasa controversially issued regulations that provoked widespread protests from industry stakeholders. A major issue identified is that there are few operators / VANs with a 51% black ownership and with the necessary cash to invest sufficiently to establish a successful business. This obstacle is likely to result in acquisitions by BEE companies of major players that have been slated for sale, such as MWEB.

Icasa has decided that a two-step process will be adopted with regards to the method or criteria of awarding radio frequency spectrum. There will be a pre-qualification phase (a beauty contest) which may be followed by an auction.

Section 34 (4) of the ECA, which came into force in 2006, requires Icasa to prepare a national frequency plan, or to amend the existing frequency plan to bring it into conformity with the provisions of the ECA within 12 months of the Act coming into force. Worse was that these BEE companies would then be precluded from merging with bigger players for at least five years, meaning they would have to find resources to invest towards developing networks.

The decisions on the allocation of radio frequency spectrum were published in the Government Gazette No 31550 of 17 June 2008.

"The following issues will be taken into consideration during the pre-qualification beauty contest phase:

On the question on how the remaining spectrum will be allocated, ICASA decided to allocate 20MHz per operator on a technology-neutral basis. Six additional national licences will be issued in the 2.5GHz band

- Minimum 51% black owned with an emphasis on woman in line with broad based BEE;
- Levels of participation in management and control in line with the Employment Equity Act;
- Affirmative procurement in line with the Preferred Procurement Policy Framework;

- Commitment to skills development of historically disadvantaged individuals in line with the Skills Development Act.

On the question of how the remaining spectrum in the 3.5GHz band should be subdivided, ICASA decided that the remaining spectrum will be considered for 2x15MHz per municipal geographic area.

In the 3.5GHz band ICASA believes that smaller operators should be accommodated within local municipality geographical areas. ICASA said that between 9 and 20 can be issued within the available spectrum.”

Icasa has reported that while all the deliberations and discussions on WiMAX spectrum allocation have been finalised, the results will only be available in Quarter 3 or 4 of 2009 when the findings and final regulations will be published. BMI-T believes that this will further delay market liberalisation in respect of facilities-based competition, which in turn will help to protect Neotel and incumbent operators for a little while longer<sup>13</sup>.

### ***Interconnection***

One of the main reasons that the telecoms market is taking so long to deregulate is that interconnection is legally, financially and technically a difficult and complicated process.

Interconnection rates in the South African telecommunications market are regarded as not being competitive. Icasa's first attempt to intervene in the interconnection market was in 2006, but the Agency was rebuffed by the mobile operators who voiced ferocious arguments that the Telecommunications Act (which was still in force at that time) did not give Icasa the jurisdiction to rule on interconnection issues.

The regulator subsequently published draft interconnection regulations that proposed that interconnection rates must be cost based and that the structure must reflect underlying costs. The regulations recommended that interconnection fees must be sufficiently unbundled so that a party seeking interconnection did not pay anything it did not require for interconnection. Further, the regulations took into account issues of Significant Market Power (SMP).

Icasa recognises that favorable interconnection agreements are crucial, particularly for new players, such as Neotel and Virgin Mobile, as a market entry enablers, as well as for Cell C as a smaller player in the market. Failure to regulate strongly on interconnection may have the effect of protecting the incumbents, as has sometimes been the case in other markets following the introduction of competition.

Chapter 7 of the ECA regulates interconnection. Essentially, any person licensed in terms of the Act must on request, interconnect its network to that of any other person licensed under the Act, as well as to any person providing a service but who is exempt from a license under the Act. There is an exception to this under section 38(5) where the licensee can be shown not have sufficient market power to necessitate an obligation to interconnect.

ICASA must determine whether a request to interconnect is reasonable, resolve disputes by imposing/proposing terms and conditions, or refer the matter to the Competition Commission. ICASA must also prescribe regulations stipulating interconnection principles

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<sup>13</sup> Vodacom, for example, is also making use of the opportunity to exploit its WiMAX spectrum that it has acquired by virtue of its shareholding in, and marketing partnership with, iBurst.

including pricing, and interconnection agreements must be filed with ICASA for review. The Minister has no powers or duties with regard to interconnection.

There is a requirement that provision of interconnection must be made on an equitable and non-discriminatory basis to all who request it. Icasa is also mandated to prescribe regulations regarding the relationship between interconnection and carrier pre-selection.

One key factor affecting telecoms pricing is how soon Icasa issues regulations regarding interconnection and whether the regulator has the clout and the will to enforce such regulations. As mentioned previously, Icasa released the revised interconnection discussion guidelines at the end of January 2007.

One sign that the incumbent operators are taking proactive steps with regard to interconnection is that Telkom has reached interconnect and wholesale agreements with several ISPs in respect of both voice and data services, although such providers still complain that the interconnect rate with Telkom is still too high.

The WTO has issued interconnection guidelines under a converged environment. In terms of the guidelines, interconnection with a major operator should be provided under non-discriminatory terms, conditions, including technical guidelines and specifications.

Several options have been suggested for a cost based interconnection, and these include.

- Flat rate tariff
- Volume based (traffic in terms of transacted bits/bytes) + fixed charge.
- Volume based (traffic in terms of transacted bits/bytes) + fixed charge + local value-additions (managed services).
- Volume based (traffic in terms of transacted bits/bytes) + fixed charge + content based differentiated tariff.
- Subscribers would pay separately for connectivity and services.

### ***Number portability***

Number portability has been identified across the world as an important enabler of competition in the telecommunications market as it allows customers to change service providers without the inconvenience of changing the telephone number. Stakeholder consultations on number portability began towards the end of 2003, and draft regulations were published in the Government Gazette in June 2004.

An agreed implementation programme targeted a phased introduction of number portability with Mobile Number Portability (MNP) being prioritised over fixed-line number portability. The idea was that MNP would spur competition in the market to the benefit of the third market entrant Cell C.

### ***Fixed-line number portability***

Fixed-line number portability has recently been successfully implemented in the market and it is still too early for an assessment to be made on its impact.

## ***Essential facilities leasing***

Wholesale facilities leasing remains an issue in South Africa, making it difficult for alternative service providers to achieve a bigger portion of the telecoms market. In light of the ECA - in which operators declared by Icasa to have SMP will be obliged to provide wholesale rates to other operators when leasing facilities, and which gives the regulator the right to prescribe regulations establishing a framework of wholesale rates to be charged for specific classes of communication services – the regulatory scenario will improve in this regard and this will favour emerging independent/alternative network service providers. What remains to be seen is just how effective this proves to be in practice, since global experience has shown that incumbents have often been capable of thwarting services-based competition despite the implementation of such regulations.

In Government Gazette No.30612 dated 24 December 2007, the regulator issued a preliminary list of essential facilities which include:

- Those referred to in Section 43(8)(a) of the Act and includes the following associated electronic communications facilities:
  - Co-location space.
  - Land-based fibre-optic cables.
  - Main distribution frame.
  
- Those referred to in Section 43(8)(b) of the Act, but not limited to the following:
  - Backhaul circuit.
  - Cable landing station.
  - Co-location space.
  - Earth station.
  - International gateway.
  - Land-based fibre-optic cables.
  - Main distribution frame.
  - Undersea-based fibre-optic cables.

Other pro-competitive measures in the pipeline include the "market definitions" regulations in line with Section 67(4) of the ECA. According to a Government Gazette issued in December 2007, the regulator intends to impose pro-competitive measures in markets deemed to be lacking competition or where current players in that segment are deemed to be having significant market power (SMP). Amongst the markets listed in the Gazette are the market for end-to-end leased lines and other wholesale services including international leased lines.

## **Services based competition**

### ***Infrastructure sharing***

As alluded to at the beginning of this chapter, the subject of essential infrastructure sharing has taken a step forward in that the regulator has published a preliminary list of essential facilities which current owners will be mandated to allow access to other

operators that need the facilities. Already Neotel has been given access to SAT-3/SAFE cable in that they are now able to "land" traffic at Mtunzini and Melkbosstrand landing stations. This development alone allows Neotel to offer competitively priced international bandwidth, although the nature of competition on these routes remains essentially oligopolistic at present.

While the current policy directions have provided for sharing infrastructure between Telkom and Neotel, it is unclear what the actual provision of this would look like. Neotel is continuing to roll out its own infrastructure, and has further enhanced its network by acquiring the entire share capital of Transtel, which also provides access to elements of the latter's telecoms infrastructure countrywide.

Mobile operators have begun self-providing transmission infrastructure, with both MTN and Vodacom having already commenced rolling out optic-fibre networks around some metropolitan areas. In the case of Vodacom, the implementation is being executed in partnership with private sector player Dark Fibre Africa, a company that does not own any telecommunications licence, but seeks to provide trenching, ducting and maintenance services to other operators on a shared basis. Others such as MTN, Internet Solutions and ECN Telecoms are likely to follow suit. This has the effect of opening up the market to smaller ECS players with desire to build their own infrastructure, and even to established operators such as Cell C who may wish to effectively own a transmission network, but have no desire to build one.

A similar concept can be executed along national long distance routes, although in this instance, it appears more likely that government's Broadband Infracore will be a wholesale facilities player, rather than a private sector company like Dark Fibre Africa. Government is seeking to actively promote wholesale services such as this on an open access basis, in so doing bringing down the cost of communications.

Neotel is also actively competing (alongside Telkom) in the wholesale transmission facilities market, at both national long distance and metro levels. Vox Telecom is an example of a former VANS player that has indicated that it will use Neotel significantly for its transmission requirements.

### ***Significant market power***

The ECA has replaced the concept of major operator status with that of significant market power (SMP) and empowers Icasa to impose pro-competitive conditions on operators found to be having SMP status. Telkom has been deemed by the regulator to be having SMP status in the end-to-end leased line market.

The important point to note is that the ECA empowers Icasa to direct an operator with SMP status to immediately stop anti-competitive behaviour and, for instance compel such operators to interconnect and lease facilities on fair terms to other market players, and charge cost-oriented prices until it is proven that such operator does not have SMP. BMI-T believes it is safe to assume that the implementation of the concept of SMP will lead to further legal wrangling as operator contest Icasa's rulings in this regard, if only to delay its implementation as long as possible.

### ***Wholesale and facilities leasing***

In light of the ECA, operators declared by Icasa to have SMP status, will be obliged to provide wholesale rates to other operators when leasing facilities. The regulator therefore

has the right to prescribe regulations establishing a framework of wholesale rates to be charged for specific classes of communication services.

At the moment there is no truly effective, pro-competitive wholesale facilities leasing regime in South Africa, a situation that has held back services based competition. However, some headway has been made in the critical areas of facilities-based competition, in that regulations have been issued that enable operators to self-provide infrastructure. The mobile operators have taken advantage of this regulation and have begun deploying optical fibre cables in some metro areas. This could have the side-effect of inducing lower wholesale prices from Telkom and Neotel in respect of leased transmission facilities – an interim measure as the end game is likely to be majority of transmission being self provided rather than leased.

### ***Promote facilities-based competition as a primary goal.***

Even though the industry has recently celebrated the high court ruling that allows VANS to self-provide facilities, the investment cost needed to set up substantial networks and operate them profitably will be out of reach for all but a select few powerful players. It is evident that promoting facilities-based competition will be one of the most feasible ways to encourage competition in the sector, and market forces will dictate how many players will survive and which ones will be consolidated through mergers and acquisitions.

## **Future competitive landscape**

### ***Market structure***

The future competitive landscape of the industry can broadly be classified into two stages, these being:

- Short-term
- Long-term

In the short-term the renewed competition in the industry will lead to even more niche players entering the market as demand for services still exists. A number of players such as PrimeTel and other VANS have launched services that are competing directly with those of existing service providers. Further second-tier players such as the likes of Altech, Vox Telecom, ECN Telecoms and possibly MWEB – depending on whether they eventually get bought or not - will be looking at moving up the ladder in order to become big players in their own right and fight it out with the incumbents for market share. The flip side of the coin for these VANS is that any measure of success will prime them for possible acquisition by the incumbent operators – subject, of course, to approval by the authorities.

In the long-term when the market contracts and margins start falling, survival of the smaller players will be in doubt and a renewed flurry of consolidations will happen. The larger players with their deep pockets and large infrastructure roll-outs will be looking at consolidating market share to boost revenues, which at that time will be at risk due to the falling margins. The simplest way of achieving this will be a move for the smaller players, which will ultimately return the industry to the ownership of a few powerful players.

A huge wild-card to the above market consolidation will be the effect of global players entering the market. Choice of entry would either be a go-it-alone strategy or a merger with, or acquisition of, one of the larger local players. Whichever way it happens, such an

entry would enhance the level of industry competition due to the increased investment in the market.

## **Players to watch**

### ***Neotel***

Neotel finally launched their consumer offerings in South Africa and have already made a significant impact in the enterprise market since launching their retail data and voice services in 2007. The company seems to be doing the right things and, despite being very late to come to the market as an SNO, is likely to be successful and impact the overall level of competition on the market in South Africa. It is also likely to stifle growth opportunities for so-called 'second-tier' players (such as the former VANS - which would perhaps now be better described as 'alternative operators').

### ***Second-tier players / alternative operators***

The anticipated level of competition in the telecoms market has picked up considerably with the promulgation of the ECA and the ruling that VANS can self-provide facilities. Not only does this open up the market to more second-tier competitors (international operators, local players and IT groups), but some players will be part of merger and acquisition activity to ensure their future in an industry that is being shaken up, either through growing organically in some cases (e.g. Internet Solutions) or releasing growth opportunity for others (e.g. iBurst, Vox Telecom).

There have been a spate of partnerships and acquisitions and one should expect numerous offerings in the coming year as more and more entrants look at overcoming last mile challenges to offer voice and other services. It is all about interconnect and the agreements these players can sign with the operators – both fixed and mobile as well as other VANS licensees. A major move forward in this regard has been made in the past year as various VANS players signed interconnect agreements with Telkom and the mobile operators. Telkom has also introduced a wholesale discount rate for VANS when reselling its Diginet leased lines – a major second-tier competition enabler.

The new entrants to the alternative voice services market, particularly Vox Telecom, Internet Solutions, ECN Telecom and to a lesser extent iBurst and MWEB, are making a limited but meaningful impact on the market. If pricing for these services is favourable, it will have an unsettling effect on the market. Their competitive role will bring down prices and this may eventually impact on the prices network operators charge in respect of their mobile broadband services.

A wildcard in the future is the possibility of the introduction of a LRIC-based interconnection rate for termination on mobile networks, and the impact this could have on origination pricing by second-tier players. In fact, the policy-makers may even adopt one of the recommendations posited in the recent Cost of Communications study, which suggests that international benchmarking would be a more suitable approach than trying to navigate the rock channel of establishing a LRIC approach that everyone agrees on.

Other players seeking to increase their influence in this arena include the IT groups or system integrators such as Altech and Business Connexion, both of whom have indicated their intent to expand their interests in the telecoms market. Similarly, the State IT Agency (SITA) believes that it has a role to play in bringing broadband services to underserved



government entities, such as schools and clinics with inadequate access to communications.

Altech has to date only been granted a temporary WiMAX test licence by ICASA. Despite now being granted an I-ECNS licence, the company is now weighing its options in this regard. So far, ICASA has only granted commercial WiMax licences to Telkom, Neotel, Sentech and iBurst. Altech believes it stands a strong chance of having its test licence converted into a full commercial licence as ICASA intends creating more competition in the market and by licencing a second-tier player instead of an existing dominant player, the regulator could achieve this.

### ***Infraco***

Government has taken a leading role in closing infrastructure gaps that exist in the market and are a hindrance to competition. An example of such interventions is the creation of The Broadband Infrastructure Company (known as Infraco or Broadband Infraco). Infraco acquired the so-called 'full service network' (FSN) from Eskom and Transnet, that was originally earmarked for Neotel. The Broadband Infraco Bill (2007) authorises the transfer of Broadband Infraco shares from Eskom Enterprises to government. The bill also defines the mandate of Broadband Infraco, gives Broadband Infraco Eskom's and Transnet's servitudes, allows Broadband Infraco to expropriate when necessary, and amends the Public Finance Management Act (1999) (PFMA) to list Broadband Infraco as a schedule 2 entity. Finally, it allows the Minister of Public Enterprises to convert Broadband Infraco into a public company at the minister's discretion. In collaboration with the Department of Communications, the ECA was also amended to allow for the licensing of Broadband Infraco

The creation of Infraco is intended by Government to lower telecommunications costs in South Africa. The company is intended to provide national backhaul infrastructure and international gateway facilities at a fraction of current costs - to 'rapidly normalise telecommunications market efficiency and address the cost of broadband to other industry players and end users, by having infrastructure in the national backbone and international connectivity at reduced prices.'

According to a National Treasury Report work previously performed under the South African national superhighway project by the Department of Public Enterprises demonstrated two key findings in relation to broadband connectivity and the telecommunications environment in South Africa;

- South Africa significantly lags behind its international counterparts in terms of ICT penetration as well as the rate of new technology adoption.
- Broadband penetration relative to international benchmarks is 'virtually non-existent' and significantly more expensive.

The report further states that "The Department of Public Enterprises has determined that in order to achieve the goals of the Accelerated Shared Growth Initiative for South Africa (ASGISA) and ensure higher ICT penetration levels and affordable broadband connectivity, government should continue to own and invest in communications infrastructure."

Broadband Infraco was designed to make available communications infrastructure that will provide access for undeveloped areas and bandwidth requirements for specific projects of national importance, which could include scientific initiatives such as the Square Kilometer



Array Telescope project and the South African Research Network, as well as a West Coast submarine cable project.

Eskom's long-distance fibre network would comprise the original asset base of Infraco, but the intention is clearly that the company will make further investments in infrastructure down the line, including a 25% share in the planned new West African submarine cable.

Telecoms stakeholders have welcomed the competition and possible lowering of broadband prices the introduction of Infraco could bring to the local telecoms arena. However, others have objected, stating that should government's latest venture become a licensed operator, it could expand its role by competing directly in the market, thus delaying true liberalisation as the end result is another telecoms entity in South Africa that is government-controlled.

BMI-T's view is that Infraco should have a positive impact on the economy as a whole, by bringing down costs across the board, provided Infraco is constrained to a role of providing wholesale facilities-based competition on long distance transmission networks, on an open access basis. Once new submarine cables land on our shores, the bottleneck will quickly switch to national long distance (NLD) transmission, which routes Infraco is serving. However, concern has been expressed by some operators that Infraco's current national network based largely on optical fibre cable lashed to Eskom's power lines, is inherently less reliable than buried fibre along national highways. This is one of the reasons cited by MTN, Vodacom and Neotel for their intention to collaborate on trenching their own NLD fibre along key routes. This would bring the number of alternative players owning transmission networks along these key NLD routes to five (including Infraco and Telkom), and would will have a similar impact of driving down telecoms costs across the board, by virtue of inducing higher levels of competition. Once the West African Cable Consortium (WACC) (in which Infraco has a 25% stake) completes its submarine cable along the west coast of Africa, this will further assist in bringing down international prices. This would follow the completion of Seacom, which has a ready for service (RFS) date slated for mid-2009. EASSy is also still moving ahead and could be completed ahead of Infraco's WACC.

### ***Provincial and Municipal Networks***

What is clear from the regulatory framework is that if provinces want to roll out broadband networks in their geographic areas, then they will need individual ECNS (i-ECNS) licences. An alternative might be a licence exemption for the provision of private ECNS, but this would limit the ability of the provinces to resell excess capacity on the network (the current proposal being 25 percent). There are several municipal entities listed on ICASA's licence conversion matrix in the PTN / licence exempt ECNS category.

In order to obtain an i-ECNS licence, a province or provincial entity must apply to ICASA in accordance with an invitation to apply (which can only follow a policy direction issued by the Minister of Communications). Currently, there is no such policy direction, and therefore no such invitation to apply.

The Minister could issue a policy direction in terms of the new provision of the EC Act that allows the Minister, after having obtained Cabinet approval, to issue a policy direction in order to initiate and facilitate intervention by the government to ensure strategic ICT infrastructure investment, and to provide for a framework for the licensing of a public entity for that purpose.

Another way to obtain an ECNS licence is in the conversion process. For example, if the provinces have licences that might be converted to i-ECNS licences (e.g., Vans licences),

then they might be able to obtain i-ECNS licences in the conversion process. This, however, is uncertain pending the conclusion of the various court cases pending. Furthermore, there are no municipal entities listed on ICASA's licence conversion matrix in the VANS category.

Another way in which to approach the service licensing issue might be for the provinces to enter into contractual arrangements with another entity or other entities that have the necessary licence or licences. These entities could include those that Icasa has indicated will be given i-ECNS licences in the conversion process, i.e., Telkom, Neotel, Vodacom, MTN, Cell C, Sentech, Fleetcall, Q-Trunk, Wireless Business Solutions, Orbicom, and Swiftnet. It could also include InfraCo or VANS licences that might be converted to i-ECNS licences, once the licensing issues have been finally dealt with. These contracted entities might also bring other rights to the table, such as radio frequency spectrum licences and rights of way that might be necessary to make a provincial broadband rollout successful and timeous. One would have to be careful about the relationship created and the contractual languages employed in order to not only ensure that the regulatory requirements of the EC Act are met, but also the requirements of public finance legislation such as the Public Finance Management Act are met.

There are various licensing options for the provinces to explore, but each requires timeous intervention or cooperation by the Minister of Communications, ICASA, or one or more existing licensees. The most straightforward option is for the provinces to have the option to apply for and obtain the necessary individual ECNS licence from ICASA on a timeous basis. This will require the Minister of Communications to issue a policy direction, after having obtained Cabinet approval, and the necessary ICASA and public input, to ICASA requiring ICASA to issue individual ECNS licenses to provinces or provincial entities chosen by the provinces for the purpose of rolling out broadband networks to be provided on an open access basis.

BMI-T is cautiously optimistic that municipal and provincial (public sector owned) networks can have a positive impact on the economy as a whole, provided they are deployed judiciously. This means that they should not compete directly with private sector players, but should seek to provide facilities to under-serviced communities that would not otherwise achieve broadband infrastructure, including defined 'needy persons' such as disadvantaged schools, clinics and public facilities such as libraries. They should also be extended on a wholesale, open access, basis to private sector players seeking to operate as second-tier service providers in providing retail services to consumers. The role of these municipal networks would then be similarly constrained as that recommended earlier in this chapter for Infraco in respect of national long distance transmission routes.

Municipal networks, operated by metro councils and smaller municipalities are another group of players with an influence in the telecoms market. Their intent may not be to challenge telecom operators directly, as municipalities are traditionally focused on local economic development and bridging the social divide, however, by providing infrastructure they will lower the cost of telecommunications for the consumer at the end of the day.

Often limited resources have forced municipalities to look to building their own infrastructure in order to cut the costs of their current telecom services procured from Telkom SA.

The ECA allows municipalities to lease access to their infrastructure to third-party telecom service providers. Most cities are expected to allow third-party service providers to use their infrastructure to provide services, rather than doing it themselves.

Many local municipalities and large metros, like City of Tshwane, City of Johannesburg, City of Cape Town, just to mention a few, are already deploying broadband and wireless access technologies. Durban (eThekweni) and Cape Town are relatively new to the game but are expected to be the first true 'digital cities' in South Africa despite Tshwane and Knysna already having networks of limited scale in place.

Both Durban and Cape Town want to offer residents cheaper broadband and free on-net local phone calls. Durban has connected its regional offices and other facilities, such as clinics, to a citywide fibre-optic network. The city is also building a wireless, wide-area network to complement the fibre infrastructure. The aim is to connect libraries, clinics and other facilities.

Once Cape Town has the wireless network in place, it plans to construct base stations at its regional offices to provide access to residential consumers and businesses. Wi-Fi and WiMAX, will both be used. The plan is to cover most of the greater Cape Town metropolitan area.

In becoming digital cities, the municipalities (and their private sector partners) will face traditional ISP challenges as users will require sophisticated services, not just bandwidth; they will need to have sufficient infrastructure in place to be able to provide adequate internet access, the ability to manage the external networks, the billing engines to manage their clients, as well as services to ensure the user experience is properly managed.

An interesting concept is that of power line technology "piggybacking" on the municipal infrastructure to provide triple-play of broadband, subscription television and Internet telephony. Goal Technology Solutions (GTS) is one of the companies touting this notion. Durban has already piloted power line communications (PLC) technology, but has decided that wireless will probably prove the most cost-effective way of delivering services, especially in sprawling suburban areas. Power line communications would probably be more effective in providing services for gated communities and blocks of flats.

## **13. ICT MARKET ANALYSIS**

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### **South Africa**

#### ***Overview of the telecommunications market***

The South African telecoms market is increasingly becoming more competitive with a number of service providers entering the market with different or enhanced service offerings. Second fixed line operator Neotel finally launched their services with a focus on the wholesale market in 2006, the corporate market in 2007 and then in May 2008 they launched their consumer offerings. Even though Neotel has had limited time in the market to gain market share thus far, their offerings are priced competitively when compared to existing services already in the market, and the expectation is that as they extend their network across the country, they will be in a position to increase their subscriber numbers and attain as much as 15% share of the fixed line market. Besides Neotel, there are a number of smaller players that have entered the market, some with reduced tariffs for services<sup>14</sup>.

Even though the market is becoming more competitive, another major trend taking place is that of market consolidation. Mergers and acquisitions have been taking place in the market, and in the past twelve months alone the telecommunications market has witnessed a number of such activities e.g. MTN acquisition of Verizon, Telkom acquisition of MWEB Africa, Vodacom acquisition of Gateway Communications and purchase of a shareholding in Stortech, and more recently, the sale by Telkom of a 15% Vodacom stake to Vodafone. With the South African market speeding towards full liberalisation, more such activities will be seen in the near future as operators seek market dominance by increasing market share in strategic markets.

Another related trend is that of increased participation in the local market by major international players. Examples of those that have shown an interest in recent years are Zain, Reliance and Bharti, although to date these ambitions remain unfulfilled. Vodafone has become the largest global player with a majority shareholding in a local operator, following its acquisition of a further 15% of Vodacom. Vodafone is the world's largest operator, and it is notable that the company also has a global strategic alliance with China Mobile. Neotel also has substantial shareholding by Tata Communications. However, despite these recent trends, the South African telecoms sector remains dominated by locally-owned players.

Another key development in late 2008 has been the ruling by the Pretoria High court that VANS should be allowed to self-provide services. Altech Autopage filed an application fighting for this right and won the case. This judgment opened the opportunity to some 300 VANS to be able to build their own networks. The Minister's attempts to have this ruling reversed also failed and the market is eagerly awaiting developments in terms of which select few of these players will find ways to afford and justify making the R1 billion plus investment that would be required to develop a significant infrastructure of their own.

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<sup>14</sup> One such service provider is PrimeTel, which launched voice services that promise cuts as high as 50% of existing tariffs.

Most players will not be in a position to bankroll the whole infrastructure building exercise and will continue relying on leased facilities from those who have. Interestingly, the company Dark Fibre Africa is a key enabler in this regard, albeit most players have shown an interest in owning their own wireless access infrastructure, with WiMAX as a key example of licenced spectrum that is being sought. The Altech ruling has also made it more pressing for Icasa to publish clear facilities leasing regulations and wholesale pricing guidelines. The regulator issued a list of facilities which they see as being 'essential' and therefore in terms of the Act access to such facilities should be at 'economically viable' rates. Amongst those listed as an essential facility is the SAT-3 cable, end-to-end leased lines, and Telkom's local exchange facilities.

The broadband market is experiencing heightened competition with Telkom having launched their W-CDMA "Do 3G" product and with iBurst/Vodacom having rolled out their WiMAX broadband offerings. Prices have been falling especially on the high-end packages, and this trend is expected to continue as more bandwidth becomes available in the market. Despite this trend, South African broadband remains relatively expensive when benchmarked against developing countries in Asia, for example, and as a result usage remains lower than these benchmarked countries.

***Teledensity and service penetration***

The growth of mobile services in the country has been behind the overall increase in penetration rates over the past years, and this trend is set to continue as mobile services close existing service provisioning gaps due to the fixed line limited geographical reach, and the relative ease of connection for mobile services. In 2000, mobile penetration was at 19%, a figure that increased to 92% in 2007. The forecast indicates that by 2012 a 126% penetration will have been reached. Figures are influenced by multiple SIM ownership, a global trend that will continue to grow worldwide for numerous reasons, the most basic of which - in developing economies - is the desire of low-end consumers to take advantage of cheaper rates and 'flavour of the week' offerings. High-end users are employing different SIMs for different services such as voice and data, in future this trend will increase as SIMs populate other devices, such as integrated car navigation/stereo systems with integral GSM voice and web access. If the multiple SIM ownership factor is eliminated, the penetration rates of unique cellular users is as shown in Table 7 and Figure 5.

On the fixed-line side, connections have been falling due to on-going fixed-mobile substitution, especially in the residential market. Fixed-line penetration has dropped from 13% in 2000 to 10% in 2007. Forecasts are that by 2012 the penetration rate will drop to 9%, although population growth mitigates this trend to some extent.

Table 4 below summarises BMI-T's scenarios assumptions arising from key trends discussed in this chapter, which in turn inform the market forecasts in the next chapter.

<b>Table 70 Telecoms market assumptions</b>		
<b>Market Force</b>	<b>Assumption</b>	<b>Impact</b>
Total fixed-line subscribers	Growth in the fixed-line market is forecast to slow down due to migration to broadband services and continuing fixed-mobile substitution. Many of Neotel's connections will be substituting Telkom lines rather than being completely new lines. However, the advent of Neotel will slow down the rate	Moderate. Neotel's market entry prices have been low in some areas and will become even more competitive over time, which will attract some new customers to the fixed line market. The overall net growth is still assumed to be negative, however, in line with the global trend (until such time as Neotel moves more

**Table 70**  
**Telecoms market assumptions**

<b>Market Force</b>	<b>Assumption</b>	<b>Impact</b>
	of decline, and some new customers will be enticed into owning a 'home phone' (i.e. other than a mobile phone).	aggressively into the converged fixed and mobile market with a multiple play service which includes e.g. mobile handsets in the bundled offering).
Neotel and Telkom and alternative access.	Both Neotel and Telkom have networks capable of providing nomadic mobile services. Assumption is that the operators will bundle these services with traditional fixed-line services and by so doing will slow down customer migration to mobile networks.	Moderate. The nomadic mobile services that these operators can launch have not been "tested" in the market as yet and they may have limited impact initially against the dominance of Vodacom and MTN. Initially the services will gain a low market share and move-up thereafter, unless Telkom prices its WCDMA-based services very aggressively, aiming squarely at the mobile data market and notebook PCs.
Interconnection rates	BMI-T forecast that the fixed-mobile interconnection rate will be brought down by between 30% and 50%, probably during 2010. This will have an immediate impact on retail pricing, including fixed-to-mobile calling of all descriptions.	High: Reduced interconnect rates will lead to rapid declines in retail prices and immediate high growth in traffic levels due to the high price elasticity in the voice market, especially calls terminating on mobile networks. It follows that the CST market will be adversely impacted.
Self-provisioning regulations for VANS	Whilst ICASA has announced intentions of converting all VANS licenses to ECNS and I-ECNS licences, very few alternative operators (such as the former VANS) will be able to afford the costs of a substantial network rollout, and still achieve profitability in the context of intense competition from the incumbents and Neotel.	Low/moderate. Some significant players such as Internet Solutions could have a bigger impact than others, should they elect to build their own infrastructure. Further consolidation may be expected in the market between licensed players such as Altech, Vox and MWEB. BEE considerations may also play a part in such acquisitions, so as to meet Icasa's requirements for spectrum licences suitable for WiMAX deployment.
Device availability	Availability of interoperable network access devices with attractive features and compelling functionalities (such as handsets with multiple band interoperability, greater memory and processing power) will improve over the forecast period, and become increasingly affordable. In the high-end of the market, handsets combining these air interfaces with Wi-Fi capability will move from a narrow niche to becoming a substantial proportion of the total by the end of the forecast period.	Moderate to High. Mobile internet is expected to dominate fixed internet access globally by 2020, but in the five year forecast period covered in this report; this will be a more gradual trend, as it will be for the masses of South Africans. However, these sophisticated converged services will spread rapidly to the middle-income brackets of the market, where the impact on the market will indeed be significant.

**Table 70**  
**Telecoms market assumptions**

<b>Market Force</b>	<b>Assumption</b>	<b>Impact</b>
Cellular access devices versus subscriber numbers	Due to the incidence of multiple accounts and active SIMs per subscriber, there will be an ongoing gap between gross and net subscriber numbers. In many cases the same operator will provide a second SIM without the necessity of opening a second account. In other cases, multiple operators will be involved. In either event, but especially in the latter case, the overall ARPU that is achievable from a single user will grow, but not necessarily at the same rate as that of the growth in number of connections.	High. Mobile cellular access, both on handsets and portable PCs, will be stimulated by the impact of multiple access modes, thus allowing the cellular operators to grow significant numbers of 3G Internet access customers as a second or third connection, rather than as a substitute for fixed wireless and ADSL connections. This will include data cards, USB modems, wireless routers, and handsets used as the access connection for PCs. Ultimately, the average customer will have SIMs in more than one device, including gaming devices, cars and wearable technology, but for the next five years this will emerge in the upper end of the market.
Cellular services pricing	Competition in the mobile market is on the increase with the mobile operators quickly countering initiatives that are being introduced by competitors. Limited mobility services from players like Telkom and Neotel and also new fixed to mobile services from various alternative operators will intensify this situation further.	High. This will add to (and reinforce) the impact on mobile prices that will be brought about by changes in interconnection rates, as discussed above.  See also earlier comments about pricing in the mobile data services market following Telkom's entry into this sector with its WCDMA-based services.
Wholesale pricing of bandwidth	The short to medium term commissioning of alternative undersea cables for international connectivity will drive the price for bandwidth down rapidly, allowing for more competition in the market which will translate to lower prices, and significantly higher performance for each rand spent at retail level.	High. Competition in the provision of international connectivity will drive down prices and increase demand. This will need to be accompanied by corresponding levels of competition in national long distance networks, and metro and local access networks, which appears to be happening now that fibre is being more rapidly deployed by a number of players in the major metro areas. Dark Fibre Africa will attempt to bring much more competition to the wholesale level in this regard, which will have the effect of leveling the playing fields for second tier/alternative operators.
Unbundling of the local loop.	Unbundling of the local loop will see emergence of more services-based competition in the fixed line market. The slated timeline for full unbundling to be completed is 2011, although BMI-T believes this to be unlikely. A simplified form of partial unbundling is more likely in this timeframe.	Moderate. International studies have shown that services-based competition is only really effective if preceded by substantial and effective infrastructure based competition. Once the latter is in place, LLU can indeed have a significant impact.

Source: BMI-T, 2009

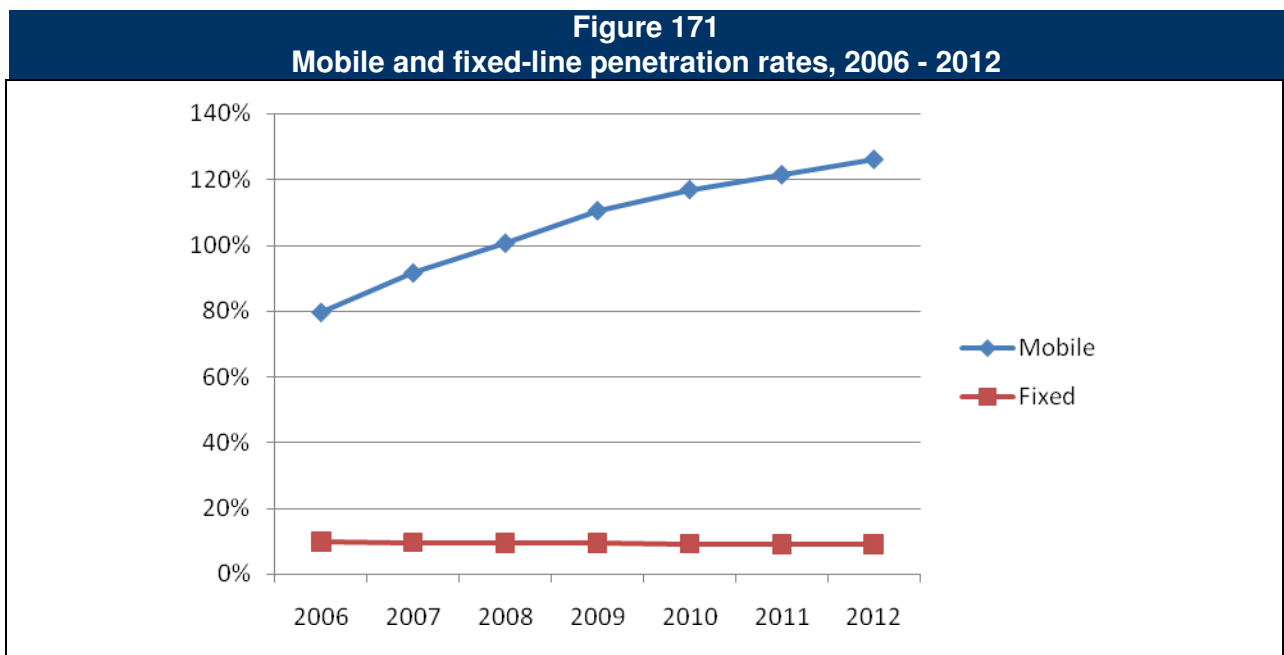


## SA mobile penetration

The table and figure below reflects BMI-T's forecast for mobile penetration in South Africa

Table 71 Mobile and fixed-line penetration rates, 2006 - 2012							
	2006	2007	2008	2009	2010	2011	2012
Mobile	80%	92%	101%	110%	117%	121%	126%
Fixed	10%	10%	9%	9%	9%	9%	9%

Source: BMI-T, SA Voice Services Market Forecast and Analysis 2008. Notes: Mobile penetration rates are based on total SIMs in the market which has an element of multiple SIM ownerships, and SIMs used for other applications such as SIMs in appliances and machine-to-machine applications.



Source: BMI-T, SA Voice Services Market Forecast and Analysis 2008

## Multiple-SIM ownership

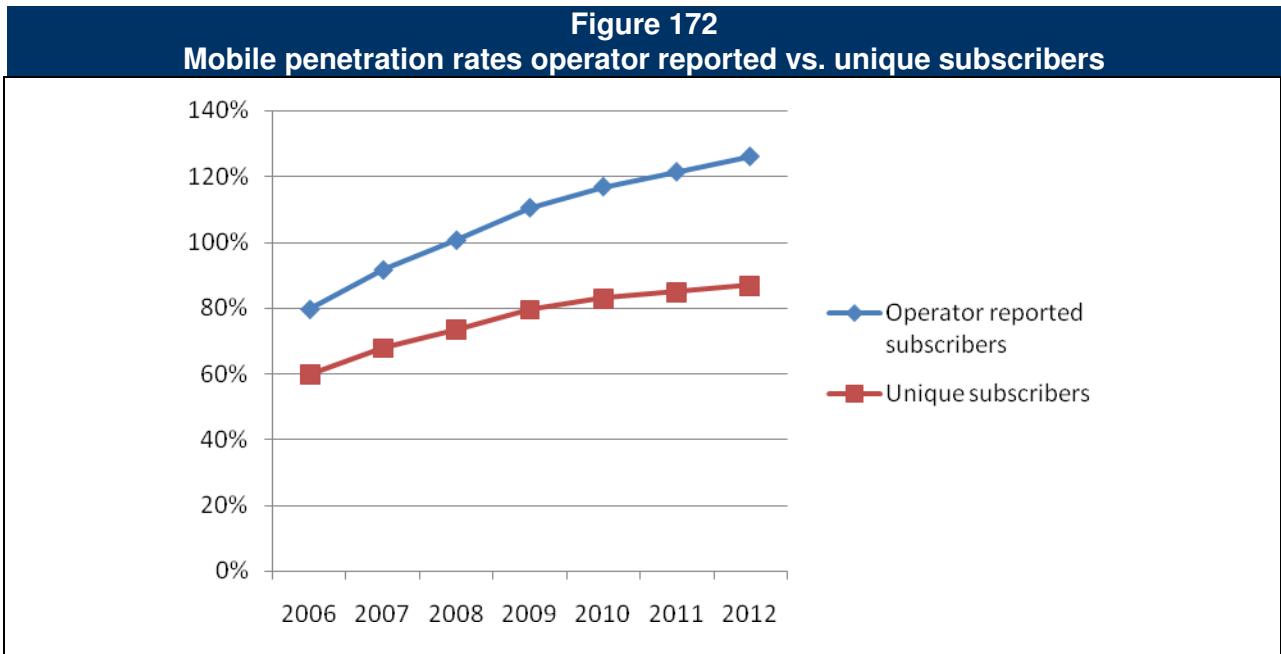
The table below shows the difference in penetration rates when the multiple-SIM ownership factor is eliminated. BMI-T estimates that in 2007 at least 26% of SIMs as reported by operators were owned by individuals with other SIMs, and the forecast is that by 2012 this percentage would have increased to 31% as more SIM-driven services and applications are introduced in the market.



Table 72 Mobile penetration rates operator vs. unique subscribers, 2006 - 2012								
	2006	2007	2008	2009	2010	2011	2012	CAGR 07 - 12
Operator reported subscribers	80%	92%	101%	110%	117%	121%	126%	6.58%
Unique subscribers	60%	68%	73%	79%	83%	85%	87%	5.10%

Source: BMI-T, 2009

The figure below is a graphical representation of the mobile penetration rates. Notably, towards the end of the forecast period, the gap between operator reported and unique SIMs grows as explained above.



Source: BMI-T, 2009

### **Market revenue**

Table 8 below shows the projected revenues for the telecoms market over the forecast period. Added to the normal categories of mobile voice and fixed voice is that of alternative voice-services. Included in the individual segments are:

- Total mobile cellular services - this include categories such as equipment sales, mobile voice revenues, interconnection revenues, and mobile data revenues
- Total fixed-line and value-added services - this includes total fixed-line voice (including dial-up), directories and other services, wholesale services, retail services internet services, and other value-added services such as hosting and security.

- Alternative voice services - this includes traditional LCR services via primicells, VoIP, and a hybrid of LCR and VoIP.

<b>Table 73</b>								
<b>Telecommunications services revenue forecasts, 2006 - 2012 (ZAR million)</b>								
	2006	2007	2008	2009	2010	2011	2012	CAGR 07 - 12
Total mobile cellular services	66,522	76,153	81,814	87,966	94,658	101,948	109,898	7.6%
Total PSTN fixed-line and value-added services	35,345	37,024	38,452	40,237	42,141	44,253	46,426	4.6%
Alternative voice services (Traditional LCR, VoIP, Hybrid VoIP / LCR) - base scenario	5,256	5,856	6,470	7,156	7,102	7,426	7,786	5.9%
<b>Total</b>	<b>107,123</b>	<b>119,033</b>	<b>126,736</b>	<b>135,359</b>	<b>143,901</b>	<b>153,627</b>	<b>164,110</b>	<b>6.6%</b>

Source: BMI-T, 2008

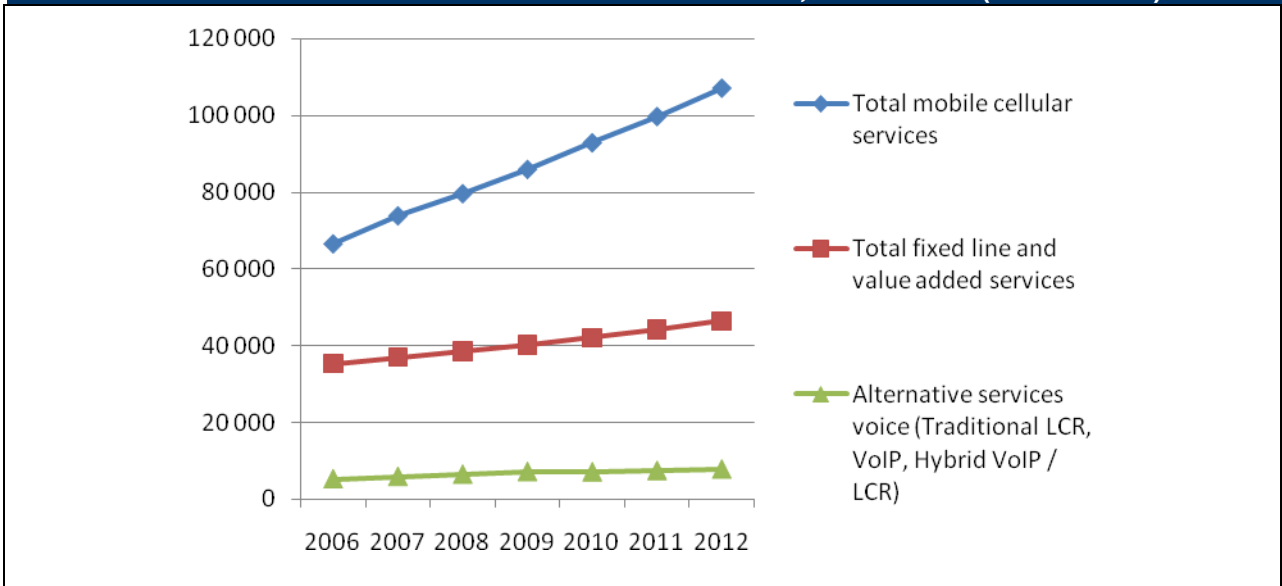
Notes:

Total mobile cellular services include mobile voice, equipment sales, interconnection, and data services. Notional reseller mark-up revenues are not included.

Total fixed-line and value added services include fixed voice, wholesale and retail services, internet services, and value-added services.

The total telecommunications market is projected to grow at a CAGR of 6.7% over the forecast period. The mobile segment will record the highest CAGR rate of 7.7% due to the forecasted growth in subscribers and the high growth rate in data revenues. The fixed-line market projection is a CAGR of 4.6%, most of which will come from data services rather than voice, which is in fact declining. Affecting fixed-line voice are factors such as migration from dial-up to Broadband services which affects local calls minutes and revenues. In BMI-T's November 2008 Voice Services Report, the base scenario for alternative voice services projects a revenue growth of 5.9% after taking into account the effects of possible regulatory intervention on the interconnection rate which is the main driver of this market as it opens up opportunities for least cost routing service for fixed to mobile calls. Pure VoIP revenues are also projected to grow as the service moves to being more main-stream in the market.

**Figure 173**  
**Telecommunications services revenue forecasts, 2006 - 2012 (ZAR million)**



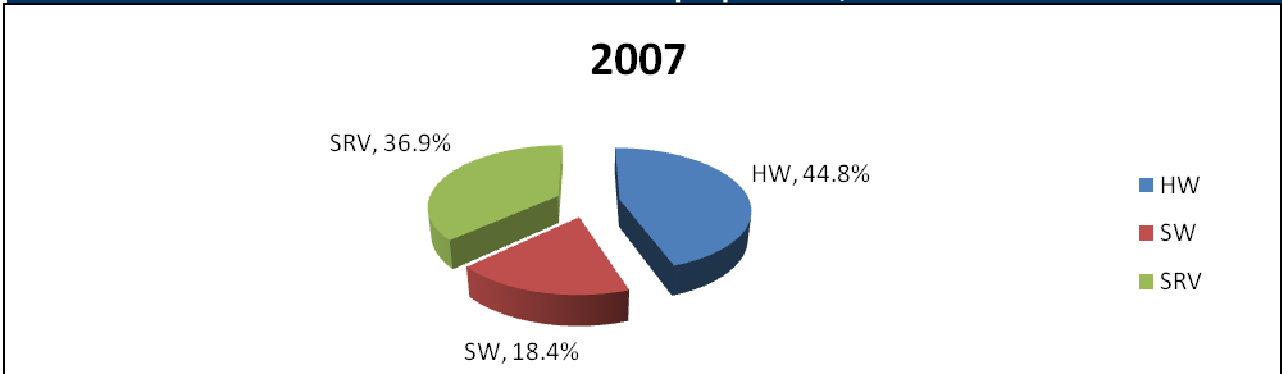
Source: BMI-T, 2008

### South African IT market overview

The South African IT market grew to R58.22 billion in 2007, up from R53.12 billion in 2006. This is a year-on-year growth rate of 9.6%.

- Hardware grew 10.7% from R23.55 billion in 2006 to R26,07 billion in 2007.
- Packaged software grew 9.2% from R9.79 billion in 2006 to R10.69 billion in 2007.
- IT services grew by 8.5% in 2007, up from R19.78 billion in 2006 to R21.46 billion in 2007.

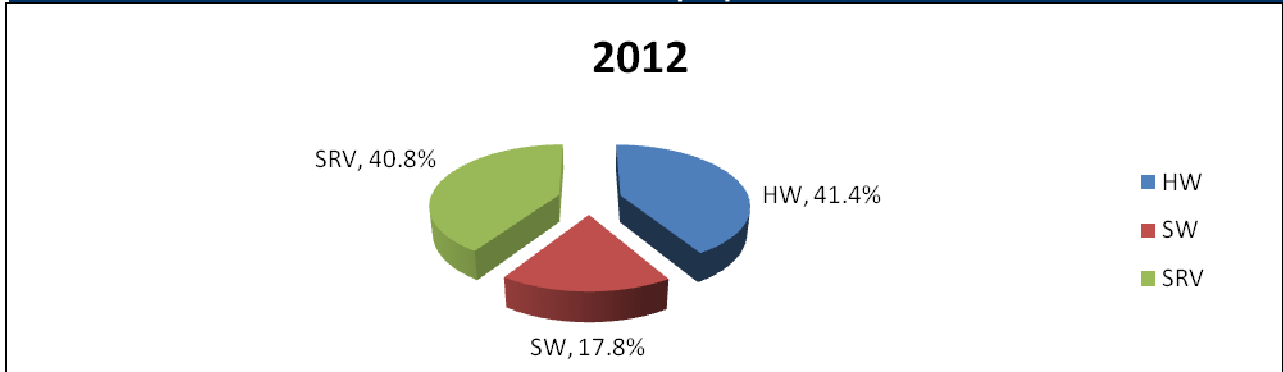
**Figure 174**  
**SA IT market revenue proportions, 2007**



Source: BMI-T, 2009

Hardware accounted for 44.8% of the IT expenditure, services accounted for 36.9%, while packaged software accounted for 18.4% of the IT expenditure in South Africa in 2007.

**Figure 175**  
**SA IT market revenue proportions, 2012**



Source: BMI-T, 2009

By 2012, it is expected that hardware will account for 41.4% of the IT expenditure, services for 40.8% and packaged software will account for 17.8% of the IT expenditure in South Africa.

It is expected that IT expenditure will move increasingly towards a services-based model as software and hardware products become more commoditised and services provide the only means of differentiation for many vendors.

The BEE status of suppliers is an important consideration especially for large companies, and is becoming increasingly important for the mid-market.

Consolidation in the South African IT market remains a factor and more consolidation can be expected in future.

#### Drivers

- **Mobility:** 3G and wireless broadband providers are slowly developing their markets, so the potential demand for wireless is huge.
- **Consumers:** this segment will continue to look towards mobility as a purchasing factor for IT products (handheld devices, portable PCs).
- **Commercial sector:** though a tendency for extended product life cycles prevails, critical investments will continue to be made.
- **Public sector:** public sector expenditure remains relatively constant, though strategies will take longer to develop with accountability being more closely monitored.
- **Security spend:** the intensification of security features is driving IT spend as the safety of electronic transactions may be jeopardised by the growing number of security breaches and scams. It is thus absolutely vital for companies to be able to certify that their systems are safe.

- 2010 soccer World Cup: there is expected to be increases in IT spend on IT infrastructure and movement or border control systems in order to prepare for the 2010 event which is to be hosted in South Africa.
- Government IT spend: government is receiving great attention from vendors in the sector as they view it as one of the largest and fastest growing sectors in SA. Electronic government initiatives will be one of the drivers of growth over the forecast period.
- Competition: amongst themselves, vendors raised the levels of competition, creating more thrust to reach the target market and attain market share and simultaneously providing more affordable and functionally-diverse devices to the consumer market.
- SMB: the ever-growing SMB sector is emerging from the perception of "invisible market" to become a lucrative buyer-market of hardware.
- Promotion: vendors are investing more capital and resources into the promotion of products, including training and education of channel partners. The consumer itself is purchasing from an educated base, thus forcing vendors to this measure.
- Finance: vendors are increasingly flexible in offering financing options for their hardware customers.
- Channel: the channel is ever-growing in importance in maintaining a solid sales connection with the consumer market, thus vendors are investing more time and capital into developing their relationships with channel members.
- Regulations and compliance requirements: in response to emerging government and industry regulations, companies procured and invested in both technologies and services that enabled them to achieve compliance. Such regulations (e.g. Sarbanes-Oxley Act [SOX], Basel II Act) mandated investments in consulting and systems integration services, business process and change management services, software, and hardware, among others. Compliance will contribute to growth in the areas of infrastructure software and services that support organisations, compliance strategies, including record management, content management, and business performance management.
- Convergence: VoIP will drive consulting and services engagements in these areas with many organisations trying to optimise their networks and decrease costs while enabling flexibility.
- Vertical markets: key vertical segments such as education, healthcare and government agencies are expected to increase IT spending in the medium term. Government is planning to spend billions on infrastructure in the next few years as a part of AsgiSA. This infrastructure spend in the transportation sector will require expenditure on IT.
- Africa: with intense pressure on home soil, many of the larger services players have expanded their reach into Africa. These strategies seem to be paying off, albeit slowly. In most instances, partnerships with foreign firms have smoothed the process of crossing into unknown territory.

## Inhibitors

- Budgetary restrictions: budgetary restrictions and insufficient profits are the main inhibitors to IT spend.
- No technology requirement: no need for technology is considered one of the top inhibitors to IT spend by the corporate and mid-market sectors in South Africa.
- IT and business disconnect: there is still a divide between business and IT personnel and this divide can result in lowered spending due to a lack of understanding on both sides of the equation.
- Economic factors: credit concerns and the weakening rand could have an effect on the company turnover and may result in decreased discretionary spend.
- Microsoft Vista: the wait and see attitude with regard to MS Vista is expected to continue for the rest of the year, thus potentially inhibiting spend on hardware and software upgrades.
- IT skills shortages: the corporate and mid-market sectors have indicated that they have experienced IT skills shortages in all environments.
- Longer sales cycles: where more business units within the organisation are involved with the decision, sales cycles will lengthen.
- Global contracts: with corporate customers lessen the opportunity for local sales activity and recognition.
- Government tender processes: the lengthy government tender processes have been exaggerated by the South African Revenue Services (SARS) withdrawing and changing the scope of large contracts.
- Fierce competition: prices are driven down at such a rate that vendors need to look at other ways to add value to their products and/or services.
- Virtualisation: will have a negative impact on the server market in the coming years.
- Small-scale outsourcing contracts: instead of pursuing large-scale outsourcing contracts, customers have, over the past few years been opting for smaller, piecemeal outsourcing contracts with best-of-breed suppliers. As market competition continues to intensify and IT budgets become more price sensitive, vendors will be forced to offer outsourcing services smaller in scope and at lower costs, which will drive down margins in this segment.
- Increasing interest rates: may curb spending in the consumer sector as people become more burdened with debt.

## IT market forecast, 2007 - 2012

The table below depicts the projected IT growth in revenue between 2007 and 2012.

<b>Table 74</b>							
<b>IT market revenue growth 2007 – 2012 (Rm)</b>							
<b>IT services</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>CAGR (07-12)</b>
Hardware (incl. networking) total	26,065	29,703	30,989	32,625	33,938	35,191	6.2%
Packaged software total	10,691	11,462	12,285	13,179	14,138	15,090	7.1%
Services total	21,460	23,911	26,264	28,840	31,646	34,656	10.1%
<b>Total IT</b>	<b>58,216</b>	<b>65,076</b>	<b>69,538</b>	<b>74,645</b>	<b>79,722</b>	<b>84,937</b>	<b>7.8%</b>
Y/Y growth	9.6%	11.8%	6.9%	7.3%	6.8%	6.5%	

Source: BMI-T, 2009

## ***Broadband***

### *Driving Motives*

Municipalities, cities, regions and provinces worldwide are adopting broadband strategies to drive the price of broadband down, increase broadband penetration and close the digital divide.

There are essentially five compelling reasons for provinces to have a formal broadband strategy. These are:

- To drive economic development and growth adding to GDP
- To prepare for the 2010 World Cup
- To reduce the costs of government and improve service delivery
- To promote Digital Inclusion
- To improve the marketability of the region and encourage investment
- To increase employment
- To stimulate SME Growth

### *Definitions of Broadband*

Much understandable confusion surrounds the term broadband. The true speed (and price) of a broadband connection to a subscriber is contingent on:

- Advertised Download Speed
- Contention ratio used
- Distance from the access network or switch
- Bit caps
- Period of review

Broadband definitions need to be revised periodically. It is suggested that this occurs every two years. In addition it is useful to define an "entry level" broadband service as well as an "average" broadband service. For the purposes of this 2008-2010 Framework "entry level service" is defined as 256Kbs with no cap and "average service" is defined as 1Mbs uncapped. Note once new submarine cables are commissioned the need for "capping" will reduce significantly -perhaps entirely.



## SA broadband penetration

The following key economic indicators and forecasts as seen in the table below are used in informing the national, provincial and municipal broadband strategy.

Table 75 SA broadband						
	2005	2006	2007	2008F	2009F	2010F
Average Broadband Cost per user	463	371	281	247	222	194
Total Broadband PC Connections	160,001	366,415	780,594	1,210,366	1,663,702	2,181,399
Broadband as a % per capita	17.0%	12.1%	8.1%	6.8%	5.9%	5.0%
National Broadband PC Penetration	0.3%	0.8%	1.6%	2.5%	3.5%	4.5%

Source: BMI-T 2008, BMR May 2007, SARB 19 June 2008, Stats SA May 2008; Absa Bank April 2008; Standard Bank May 2008. Note: Economic forecasting is an inexact science, and forecasts can vary considerably.

### ***Emerging ICT trends and opportunities in provincial and local government***

Governments are still extremely decentralised and what can appear to be isolated trends have the potential to build larger government-wide trends (such as what is currently occurring with open source software adoption). It is essential for vendors to create strategies that take activities across the entire government spectrum into consideration and have a comprehensive understanding and view of the region.

There are many emerging trends in provincial government specifically related to IT and telecoms and these include:

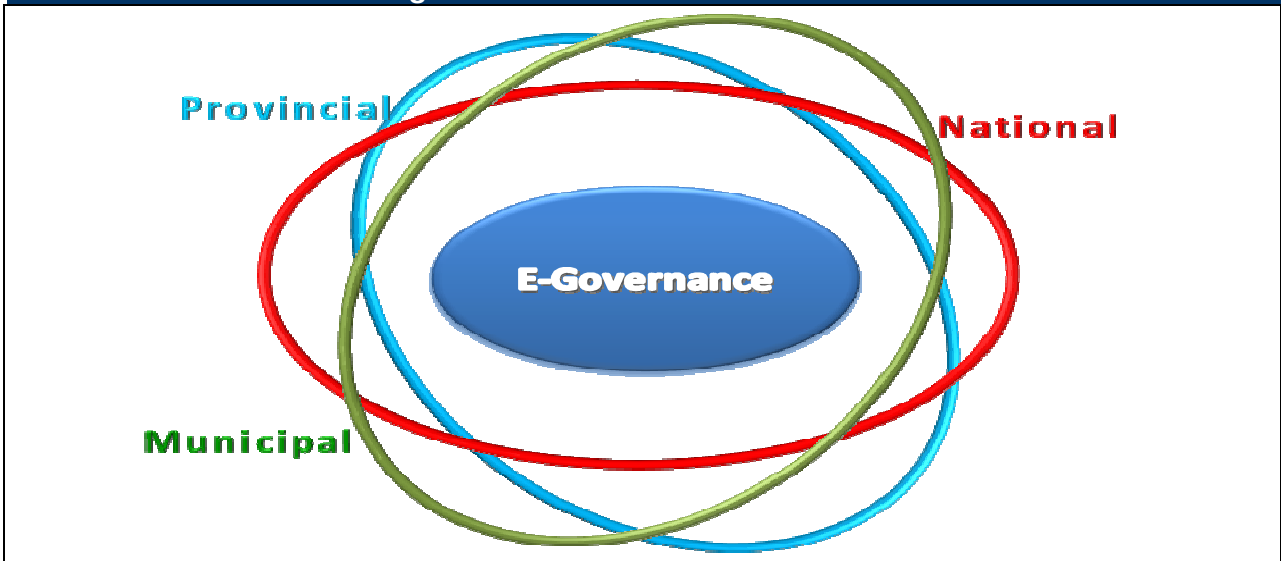
- Budgetary issues. Tight and insufficient ICT budgets remain critical for both provincial and local government. Local government is the key area public sector segment where service delivery takes place for the citizen and, ironically, is the most cash strapped and resource-limited sphere in government.
- ICT skills shortages. Provincial and local government are facing massive skills shortages and staff retention is a major problem for both of these spheres. There is a lack of technical skills (this is the area that has the biggest shortage in government) while Microsoft, SAP and Oracle skills are also required. Infrastructure and systems analysis are skill areas that are also lacking particularly in provincial and local government.
- Consolidation and integration. Specifically relating to metropolitan levels, server consolidation is taking place. The trend of 4-way servers moving into provincial government is increasing. There is a strong drive in government towards integration and consolidation while local government needs to work towards the better integration of infrastructure.

- Growth opportunities. There are currently more acquisitions of integration software, financial systems and hardware (i.e. PCs and printers) and this trend is predicted to increase.
- Shared services concept. This can be defined as the consolidation of administrative support functions, like human resources (HR), finance, IT and procurement from several agencies into a single, stand-alone entity as efficiently and effectively as possible. It is predicted that in the future, local governments will integrate BI with GIS and e-government will grow throughout government due to the problems with skills and tight ICT budgets.
- Self-service. Only a handful of services can currently be fulfilled through the internet; however this is slowly increasing especially with regards to local government.
- Shared GIS. Municipalities must work in concert to implement sharable GIS (Geographic Information Systems) sets and solutions. This will allow municipalities to share costs and ensure greater interoperability across national departments such as the SAPS and Department of Land Affairs.
- Esecurity and information risk management. All three spheres of government are still concerned with ways to minimise the risk with regards to information systems. No matter how well-designed or well-protected an information system is, there is always risk. IT systems and the information they hold, the hardware on which they reside and through which they can be accessed are major assets and government should do everything in their power to manage security risks.
- VoIP. VoIP is a technology that allows voice to be sent using an internet connection rather than the telephony technology now being used. This leads to cost savings and provides government with multi-service offerings.
- Business intelligence. This is an integral component of government back office reform. BI's main technology components are data integration, analysis, reporting, and performance management. When used with e-government solutions, BI can provide transparency into government processes. In the future, provincial and local government will integrate BI with GIS and e-government and this will be the norm in government as a whole.
- Wireless technology and solutions. Many municipalities are looking into acquiring wireless broadband solutions due to its cost benefits and effectiveness. This will also benefit disadvantaged communities if implemented by all areas of local government.
- Call centres. The use of call centres to improve communication between provincial and local government and its citizens is still being implemented. Government has plans to establish more call centres throughout the country.
- Open Source Software. Open Source Software is still an important trend in provincial and local government. The free availability of the source code encourages a model of software development, testing and modification based on public collaboration. The importance of open source software within the South

African context is underscored by its inclusion as a component in almost every major ICT strategic proposal.

- Outsourcing. Over the past few years there has been a move to outsourcing in government especially since skills shortages is such a problem.
- E-governance portals. This has been deployed for various provincial and metropolitan governments. Gauteng in particular has gotten smarter with the launch of the e-governance portal (Gauteng online). The project forms part of the provincial government's e-government vision to use information and communication technology (ICT) to improve service delivery, in line with the Batho Pele (People First) principles.
- E-government and m-government. Most governments around the world have now introduced some form of e-government offering online interaction to the public. E-government can be defined as the use of information and communication technologies (ICTs) to improve existing government business processes and public administration.
- M-government is a subset of e-government. Those ICTs are limited to mobile and/or wireless technologies like cellular/mobile phones, and laptops and PDAs (personal digital assistants) connected to wireless local area networks (LANs). M-government can help make public information and government services available "anytime, anywhere" to citizens and officials.
- Information Communications Technologies (ICTs) are now being applied in innovative ways and these include, using mobile phone short-messaging system (SMS/text) facilities for service delivery in areas such as electronic voting, law enforcement and traffic updates (i.e. the City of Johannesburg traffic fine system, where motorists around Johannesburg are now able to find out if they have outstanding traffic fines, summonses or warrants of arrests through an SMS).
- For citizens in South Africa e-government means integrating with one government. The diagram below illustrates how all three spheres of government are inter-linked through e-governance.

**Figure 176**  
**Egovernment interaction for citizens**



Source: E-government Government Newsletter

The South African government is aware of the challenges of government and overcoming the digital divide, and is confident that its strategies would eventually get it there. Through the Governance and Administration cluster, it has initiated the development and implementation of South Africa On-line, a single gateway facilitating access to all information about, and services provided by the government. The project is a bold initiative that will transform the nature of interaction between government and citizens. Through the creation of a mechanism of seamless "joined-up" government, the initiative will also have a profound effect on the current structures and processes of government. The Western Cape and Gauteng provincial governments and the City of Cape Town are currently trendsetters in e-government.

In South Africa, strong consideration is being given to setting up a considerable number of access points for citizens, in the form of walk-in kiosks, or through self-help kiosks. Unlike many other African countries South Africa has a post office within incredible reach – in excess of 2,500 points of service are already in place through traditional post offices, retail post points and postal agents. In addition, South Africa has a highly developed financial service infrastructure. There are thousands of ATM points across the country – many in remote areas where people have quicker access to them than to government. These are valuable resources that are currently delivering isolated services – an amazing backbone upon which to build.

Currently, the Western Cape and Gauteng provinces are ahead of the rest in their e-government initiatives.

#### *Drivers and inhibitors of ICT adoption in government*

South Africa is at a stage of its development where it already has an established ICT industry and has a reasonably well developed ICT infrastructure serving the more developed population. Even though there is room for improvement, the country's level of investment in ICT as a percentage of GDP appears to be reasonable. However, the challenge for the country is to build on this strength and incorporate it into a plan that supports broad involvement across the wider population.

The table below summarises the drivers and inhibitors of ICT adoption in provincial and local government.

**Table 76**  
**Drivers and inhibitors of ICT adoption in provincial and local government**

Drivers of ICT adoption	Inhibitors of ICT adoption
Enhance effectiveness of operations – relating to service delivery	Tight ICT budgets
Improvement of service delivery	Constraint of full implementation of technologies (i.e. due to management and/or regulations)
Consolidation of IT systems (i.e. movement away from legacy systems and visualisation)	IT skills and change in organisational culture
Economies of scale (i.e. ROI and price/performance ratios)	Inflexibility (i.e. structural flexibility)
Process improvements	Lack of planning from departments
Access to data	Culture of complacency by employees
Skilled and training staff requirements	Organisational challenges (i.e. standardisation of work processes and automation)
Interoperability and integration	Difficulty in implementation, restructuring and defining data structures
Enhance effectiveness of operations	
Infrastructure replacements	
Skills shortages (driving services spend)	
Transparency and accountability	

Source: BMI-T, 2008

According to BMI-T the biggest drivers of ICT adoption (which will in turn increase ICT expenditure) are the improvement of service delivery and processes.

The foundation for effective service delivery and creating a better life for all the people rests with having a strong, people-centered developmental state.

The provincial government set good governance as one of its key priorities in 1999 and committed itself to:

- the transformation of local government
- the re-organisation of the public service to meet more effectively the priorities of service delivery and to foster the ethic of Batho Pele
- prudent and effective use of government resources
- public accountability

Important progress has been made on all these fronts, with public service transformation, service delivery improvements, communication and public participation, sound intergovernmental relations and prudent management of public finances enjoying top priority.

An inhibitor of ICT adoption is tight ICT budgets which are a major problem for CIOs and IT and telecoms managers in government. On top of this provincial and local government have a shortage of key IT and telecoms skills which is one of the main inhibitors of ICT adoption in this sector. The skills shortage requires a holistic approach. Government is thinking beyond IT skills and talking about how to build an information society/knowledge economy.

According to BMI-T's research, the ICT skills shortages in provincial and local government are mostly in areas such as:

- Lotus Notes Development
- Linux
- project management
- systems integration
- system implementation skills specifically related to SAP, Microsoft and Open Source

ICT skills shortages tend to refer to ICT practitioner skills, such as those skills that build, develop, maintain and run ICT systems. According to some analysts, in order to build a knowledgeable economy, other types of ICT skills are needed too. These, categorised by the European eSkills Forum, are:

- ICT user skills – i.e. the skills needed by people who use ICT to do their work
- ebusiness skills – the skills that will enable business owners to use technologies like the internet to improve performance, enhance business operations, or create new businesses
- eliteracy – the ability to use the internet to search and retrieve information, participate in virtual communities and so on

## Summary of Provincial and Local government ICT expenditure

This section includes the forecast assumptions for the ICT expenditure figures in the report. It also summarizes the ICT expenditure and growth rates in both provincial and local government. The following table provides the assumptions used to make the forecasts in this study.

<b>Table 77 Forecast assumptions</b>		
<b>Market force</b>	<b>BMI-T assumption</b>	<b>Impact</b>
Political/geopolitical	Uncertainties in the immediate future. Increased talk of recessionary conditions in the US. Locally the political conditions are not ideal with recently elected head of the ANC, Jacob Zuma's corruption trial and senior government official court cases.	High. SA economy continues to display resilience and therefore investment confidence in the country drops.
<b>Technology/service delivery</b>		
Consulting and integration capabilities	Need for integration and the high number of "isolated" solutions create a need for all kinds of IT competences.	High. Although a certain migration takes place to standard solutions, the modernisation and integration will still be custom based development.
Convergence	Convergence is a complex phenomenon working at many levels - convergence of the telephone network and the internet; communications and IT technologies; consumer and enterprise technologies; and even storage, routing, and processing in the data centre. Perhaps the most overarching is the convergence of voice, video, and data communications. BMI-T assumes that this convergence is a permanent phenomenon and that it will pick up pace as the decade wears on.	Moderate. Convergence will drive new competitive dynamics, offer new applications and functions to customers, and strain the legal and regulatory systems. It will also drive increased ICT spending.
Free Software	This technology facilitates the creation of infrastructure for business and government.	High. Can drive change in government and is extremely cost effective since it eliminates licensing costs.
Technology adoption: simplification	ICT complexity is reaching a crisis level, presenting a continuous opportunity for services that simplify technical infrastructures and environments.	High. The need to simplify ICT environments will force enterprises and government to seek assistance from external firms.
Legacy systems	Choice of standards for data structures, architecture and interfaces will drive integration of existing applications.	Moderate. Standards will enable integration which will create cost and time savings, and efficiency of operations.
Outsourcing ICT	By outsourcing ICT-related activities this allows government to reinvest in egovernment development and strategies.	Moderate. More focus on key government initiatives and savings can occur in the long run.
Efficiency in administration	Modular applications are more cost effective and, if outsourced, can be cheaper.	Moderate. Egovernment solutions provide efficiency to administration in government and service delivery to the public.
Bandwidth and the regulation of	A multi-strategy approach needs to be adopted and implemented. Rural markets need to be	High. Emergence of wireless technologies, including VoIP, will

**Table 77**  
**Forecast assumptions**

<b>Market force</b>	<b>BMI-T assumption</b>	<b>Impact</b>
telecommunication	considered and structures need to be put into place.	dramatically change the local landscape.
ICT and the 2010 FIFA World Cup	The World Cup is bringing much needed investment into the country. There has been a dramatic increase in ICT expenditure due to government ICT projects related to the 2010 FIFA World Cup.	High. If projects and initiatives are completed on time and implemented effectively, this will have a major effect on South Africa and its economy including service delivery.
Government ICT related projects and under spending of ICT budgets	There are many new and ongoing ICT projects in government. If ICT budgets are under spent or not spent effectively, this has a major impact on the ICT expenditure forecasts.	High. ICT expenditure can be affected by major project delays or failures as well as big deals that may occur over the forecast period. Under spending in one year can sometimes defer expenditure from one year to the next.
Storage	Proliferation of data and new customer channels is increasing data storage requirements. Regulatory compliance is driving spend in this area.	High. The need to store and retrieve information will force government to seek the relevant technologies and services to assist them in this endeavour.
<b>Market Characteristics</b>		
Service delivery strategies	Government's main aim is to improve service delivery and modernisation.	Moderate. Overall budgets should be used to fund modernisation in government. A fast growing trend is the use of e-government.
<b>Labour</b>		
Employee retention and skills shortages	Government employees and officials need to enhance their ICT skills and there is still a great need for effective ICT training in government as a whole.	High. The training and up-skilling of government staff members will take time and is a slow process.
Technical skills	Government must place an increased emphasis on education. Technical skills need to be transferred to communities, addressing education outside of the formal education system.	Moderate. This will increase government's capacity to produce high quality ICT skills.
<b>Market Ecosystems</b>		
Complexity of IT environments	Organisations' and government's current IT environment were typically not designed, but rather evolved into what they are today. Hardware has been replaced and upgraded, applications have been added and new technologies and standards have emerged. All of these factors have made today's IT environments increasingly complex. The impact of this complexity is twofold: an increasing cost of management and a growing challenge of integration.	High. The impact is a growing demand for management to introduce software to reduce operational costs and a growing demand for services around consulting and systems integration as well as consolidation projects (e.g. storage).
<b>Consumption</b>		
E-readiness	South Africa still has a problem with the adoption of e-readiness. Government needs to promote and encourage the use of these channels.	Moderate. Since e-readiness strategies are being rolled out slowly, use isn't growing at a suitable rate which in turn could decrease investments and therefore fast



**Table 77  
Forecast assumptions**

Market force	BMI-T assumption	Impact
		efficiency gains will not occur.

Source: BMI-T, 2008

For the purpose of understanding budgets in provincial and local government, which affect their ICT spend, the following section defines operating and capital budgets and includes various tables which illustrate the actual budget amounts for both provincial and local government. At the end of this section a summary of each province's and metro's ICT spend is given.

In provincial and local government there are two types of budget:

- Capital budget: which deals with big costs that you pay once to develop something, and how you will pay for this. The capital budget puts money aside for planned expenditure on long-term purchases and big investments such as land, buildings, motor vehicles, equipment and office furniture that will be a municipal asset for more than a year - probably for many years to come.
- Operating budget: which deals with the day-to-day costs and income to deliver services. In other words, the operating budget lists the planned operating expenditure (costs) and income for the delivery of all services to the community.

### **ICT consumer penetration in Mpumalanga**

The tables below reflect ICT penetration in Mpumalanga and segmented per district and local municipality.

**Table 78**  
**ICT consumer penetration by district municipality**

	Radio	Cellphone	Television	Telephone	Computer	Internet access	Average	Total households
DC30: Gert Sibande	80%	75%	65%	11%	12%	5%	34%	247 517
DC31: Nkangala	82%	81%	67%	11%	12%	4%	35%	305 569
DC32: Ehlanzeni	73%	76%	61%	6%	9%	3%	31%	387 318
<b>Mpumalanga</b>	<b>78%</b>	<b>77%</b>	<b>64%</b>	<b>9%</b>	<b>11%</b>	<b>4%</b>	<b>33%</b>	<b>940 404</b>
<b>Total</b>	<b>77%</b>	<b>73%</b>	<b>66%</b>	<b>19%</b>	<b>16%</b>	<b>7%</b>	<b>43%</b>	<b>12 500 624</b>

Source: Community Survey 2007

**Table 79**  
**ICT consumer penetration by local municipality**

	Radio	Cellphone	Television	Telephone	Internet	Average	Total Households
MP301: Albert Luthuli Local Municipality	78%	72%	58%	3%	2%	35.9%	46 036
MP302: Msukaligwa Local Municipality	88%	84%	70%	12%	5%	45.6%	31 751
MP303: Mkhondo Local Municipality	80%	76%	60%	6%	3%	38.8%	29 926
MP304: Seme Local Municipality	80%	64%	67%	15%	4%	39.8%	21 605
MP305: Lekwa Local Municipality	86%	81%	76%	16%	7%	46.6%	26 685
MP306: Dipaleseng Local Municipality	80%	68%	69%	14%	6%	41.1%	12 322
MP307: Govan Mbeki Local Municipality	77%	77%	64%	15%	7%	43.1%	79 191
MP311: Delmas Local Municipality	77%	80%	70%	10%	6%	42.7%	15 129
MP312: Emalahleni Local Municipality	80%	81%	62%	15%	5%	43.1%	105 594
MP313: Steve Tshwete Local Municipality	86%	82%	73%	20%	8%	48.0%	50 449
MP314: Emakhazeni Local Municipality	85%	83%	60%	15%	2%	43.1%	12 127
MP315: Thembisile Local Municipality	83%	83%	70%	4%	0%	41.1%	65 394
MP316: Dr JS Moroka Local Municipality	81%	77%	70%	4%	1%	39.7%	56 874
MP321: Thaba Chweu Local Municipality	70%	77%	54%	8%	4%	37.5%	28 259
MP322: Mbombela Local Municipality	79%	79%	67%	10%	5%	42.4%	137 353
MP323: Umjindi Local Municipality	75%	75%	59%	13%	4%	39.9%	18 768
MP324: Nkomazi Local Municipality	72%	76%	54%	4%	3%	35.7%	78 252
<b>Mpumalanga</b>	<b>78%</b>	<b>77%</b>	<b>64%</b>	<b>9%</b>	<b>4%</b>	<b>33%</b>	<b>940 404</b>
<b>Total</b>	<b>77%</b>	<b>73%</b>	<b>66%</b>	<b>19%</b>	<b>7%</b>	<b>43%</b>	<b>12 500 624</b>

## Rural versus urban internet penetration

The rural versus urban internet penetration rates for households are shown in the table below.

<b>Table 80 Mpumalanga household internet penetration by rural and urban split</b>				
	<b>Settlements &amp; Non-Urban (Less than 500/ Non-Urban) Rural</b>	<b>Small Towns &amp; Villages (500 - 39 999) Small Urban</b>	<b>Cities &amp; Large Towns (40 000 - 249 999) Large Urban</b>	<b>Grand Total</b>
Dial-up (Standard telephone line)	5 176	1 209	3 330	9 715
Cable Broadband (ADSL)	314	2 072	4 339	6 724
Wireless Broadband (iBurst, 3G, HSDPA, WiFi)	1 015	5 505	1 886	8 405
No Internet access at home	443 751	151 095	143 748	738 593
<b>Grand Total</b>	<b>450 255</b>	<b>159 880</b>	<b>153 303</b>	<b>763 438</b>
<b>Percentage splits</b>				
	<b>Settlements &amp; Non-Urban (Less than 500/ Non-Urban) Rural</b>	<b>Small Towns &amp; Villages (500 - 39 999) Small Urban</b>	<b>Cities &amp; Large Towns (40 000 - 249 999) Large Urban</b>	<b>Grand Total</b>
Dial-up (Standard telephone line)	1.1%	0.8%	2.2%	1.3%
Cable Broadband (ADSL)	0.1%	1.3%	2.8%	0.9%
Wireless Broadband (iBurst, 3G, HSDPA, WiFi)	0.2%	3.4%	1.2%	1.1%
No Internet access at home	98.6%	94.5%	93.8%	96.7%
<b>Grand Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: AMPS 2008 RA - Household Database

The table shows that only 1% of households in rural areas have internet access, and of those that do that vast majority have dial-up access, followed by Wireless broadband, which is most likely 3G and HSDPA access, cable broadband access is very low most likely due to unavailability of infrastructure and costs of broadband. For small towns and villages wireless access is the highest, again most likely 3G, Wi-Fi and HSDPA access, due to the high penetration rate of cellphones and the unavailability and high costs of cable broadband access. Dial-up is low possibly also due to fixed line infrastructure not being available. For cities and large towns, cable broadband access is the highest showing the infrastructure is more readily available there.

## Number of broadband connections in SA and Mpumalanga.

The numbers of historical, actual and forecasted broadband connections are seen in the table below. These numbers are derived from residential and business broadband connections. Obviously there are many more broadband users as many people access the

internet at educational institutes, multipurpose community centres, internet cafes or over their mobile phones.

<b>Table 81 Number of broadband connections in SA and Mpumalanga , 2005-2010</b>						
	2005	2006	2007	2008F	2009F	2010F
Mpumalanga	7,276	16,662	35,497	55,040	75,655	99,196
<b>Total Broadband Connections</b>	<b>160,001</b>	<b>366,415</b>	<b>780,594</b>	<b>1,210,366</b>	<b>1,663,702</b>	<b>2,181,399</b>

Source: Community Survey 2007, AMPS, 2007 BRA ,BMI-T , 2009

Mpumalanga only has 4,5% of all broadband connections in SA. Broadband penetration as seen in the table below. If now additional intervention is taken by Mpumalanga province we estimate a broadband penetration of only 2.8%

<b>Table 82 Broadband penetration in SA and Mpumalanga , 2005-2010</b>						
	2005	2006	2007	2008F	2009F	2010F
Mpumalanga	0.21%	0.47%	1.01%	1.55%	2.13%	2.8%
<b>Total National Broadband</b>	<b>0.34%</b>	<b>0.77%</b>	<b>1.64%</b>	<b>2.53%</b>	<b>3.46%</b>	<b>4.52%</b>

Source: BMI-T, 2009. Source: Community Survey 2007, AMPS, 2007BRA ,BMI-T , 2009

### *Mobile connectivity for internet access*

What has not been taken into consideration in these tables is the number of people who are connecting to the internet and have broadband over a mobile phone. Due to the highly prohibitive costs of PCs and traditional internet connectivity, the limited household access in most areas of our country as well as the incredibly high penetration of mobile phones in SA, the number of people that access the internet over their mobile phones is already higher than them having household access.

The table below illustrates this trend.

<b>Table 83 Individual access ICT, 2007</b>						
	Personally have access to a land line at home	PC in the home	Personally own, rent or have use of a cellphone	Personally have some type of Internet access at home	Browsed WAP or Web from the cellphone	No internet access at home but accessing the internet through a cellphone
Mpumalanga	9.9%	9%	64.0%	1.7%	3.8%	2.8%
<b>SA Total</b>	<b>19.2%</b>	<b>14%</b>	<b>60.5%</b>	<b>4.2%</b>	<b>6.4%</b>	<b>4.4%</b>

Source: AMPS 2007B RA, BMI-T , 2009

Only 14% of people over 16 interviewed had a PC in the home, but over 60% had their own cellphone. Only 4.2% have some type of internet access at home, but over 6% have browsed by wap or the Web from their cellphone. These differences are even more hugely apparent is certain provinces where home internet access is as low as 1.1% but 4.4 % have accessed the internet via their cellphone. This is going to be an ever increasing trend and needs to be taken into consideration with any broadband strategy

## ICT spend in all business and government in Mpumalanga province

About three percent of all business ICT spend is found in Mpumalanga. This amounted to close to R2.8bn in 2007, with R1.2bn being IT spend and R1.6bn being telecoms spend. The table below reflects further breakdowns of ICT spend.

Table 84 Mpumalanga business ICT spend, (Rm), 2007							
	>1000 empl.	201-1000 empl.	51-200 empl.	31-50 empl.	11-30 empl.	2-10 empl.	Total
<b>Telecoms</b>							
Mobile	75	84	131	110	102	24	526
Fixed voice	68	76	120	163	184	42	655
Internet access	15	20	41	17	12	4	110
Other data	59	46	63	37	11	2	218
<b>Total telecoms</b>	<b>234</b>	<b>166</b>	<b>199</b>	<b>203</b>	<b>216</b>	<b>221</b>	<b>1,240</b>
<b>IT</b>							
Hardware	204	184	172	68	61	16	704
Software	93	82	76	27	21	5	304
Services	208	163	134	33	19	2	559
<b>Total IT</b>	<b>504</b>	<b>429</b>	<b>382</b>	<b>128</b>	<b>102</b>	<b>23</b>	<b>1,567</b>
<b>ICT</b>							
<b>Total ICT</b>	<b>738</b>	<b>595</b>	<b>580</b>	<b>331</b>	<b>318</b>	<b>244</b>	<b>2,807</b>

Source: BMI-T, 2009

### Provincial Government ICT market size and forecast

The following section summarises the ICT expenditure for both provincial and local government. Further breakdowns of the ICT expenditure per province and metro are discussed in detail in their relevant chapters.

Table 85 Total ICT expenditure for provinces (R'000)					
	2007/08	2008/09	2009/10	2010/2011	CAGR
Mpumalanga	259,362	262,113	290,678	315,394	6.74%
SA Total	3,487,042	3,475,754	3,710,156	3,960,203	4.33%

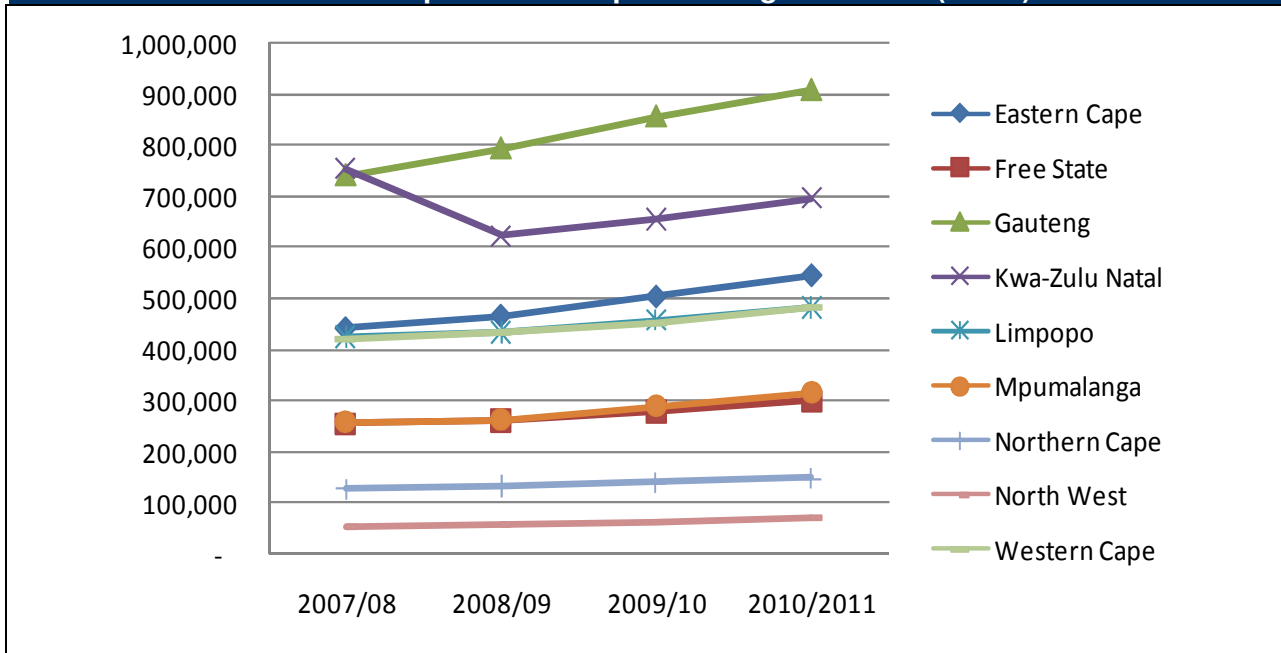
Source: BMI-T, 2009

The total ICT expenditure for the provincial government in South Africa increases from R3.4 billion in 2007/08 to R3.9 billion in 2010/11 and has a CAGR of 4.33%.

As seen in the table on the previous page, the Gauteng provincial government spends the most on ICT and the expenditure increases from R741 million in 2007/08 to R909 million in 2010/11 with a CAGR of 7.04%. Kwa-Zulu Natal provincial government has the second biggest ICT spend and increases to R697 million in 2010/11; however, there is a negative CAGR growth rate due to major ICT spending occurring in 2006/07 and 2007/08.

The line chart below illustrates the total ICT expenditure for provincial government.

**Figure 177**  
**Total ICT expenditure for provincial government (R'000)**



Source: BMI-T, 2009

As seen in the diagram above, the provinces with the lowest ICT expenditure, in ascending order, are North West Province, Northern Cape Province, Free State Province followed closely by Mpumalanga.

### ***ICT spend within the of Mpumalanga provincial government***

This section discusses the ICT expenditure specifically related to the Mpumalanga provincial government.

**Table 86**  
**Mpumalanga Provincial government ICT expenditure and growth (R'000)**

	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	CAGR
HW	33,631	48,404	42,090	45,772	49,583	10.2%
SW	538	2,343	875	627	780	9.7%
IT services	63,716	81,421	86,252	103,710	115,771	16.1%
Communications	103,176	127,194	132,896	140,569	149,259	9.7%
<b>Total</b>	<b>201,062</b>	<b>259,362</b>	<b>262,113</b>	<b>290,678</b>	<b>315,394</b>	<b>11.9%</b>

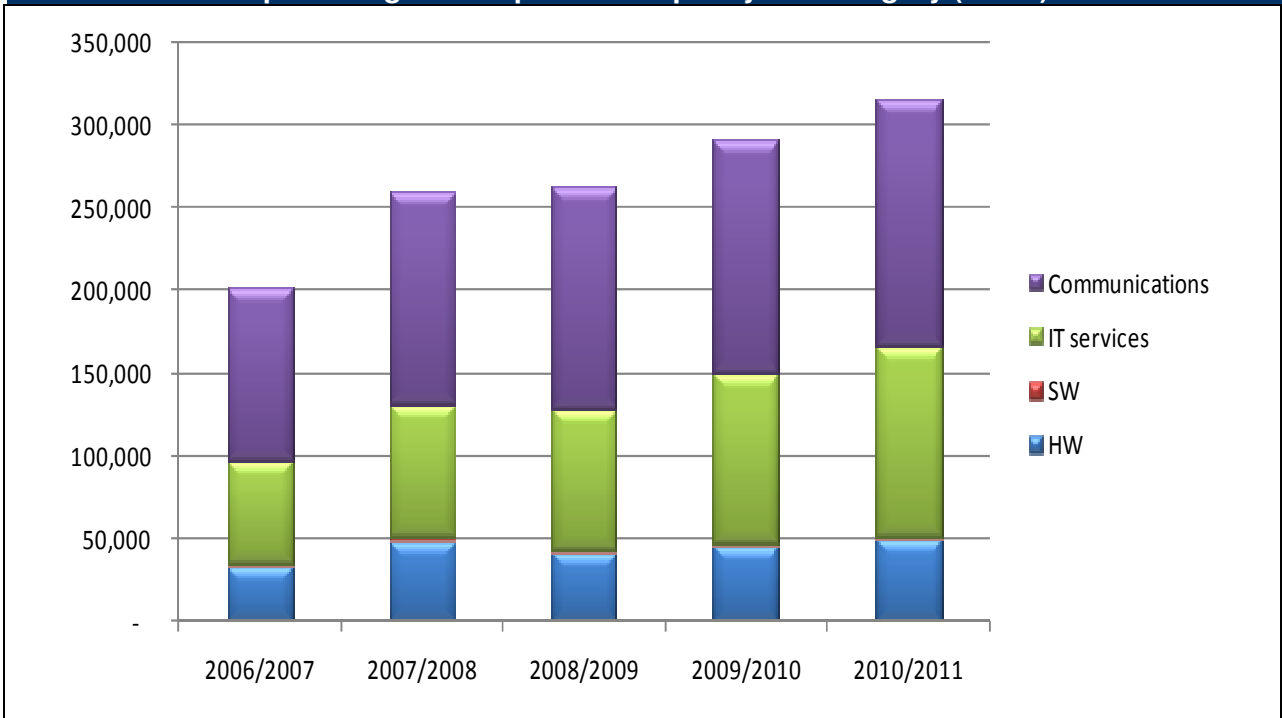
Source: BMI-T, 2009

With R259 million spent in 2007, growth in the Mpumalanga provincial government's ICT spend is forecast at a compound annual growth rate of 11.9%, and is expected to reach R315 million in 2010/11.

Software expenditure, at a peak of R2.2 million last year, will restabilise below the R1 million mark, with overall growth across the forecast period at 9.7%.

IT services expenditure is projected at the highest rate of growth with a CAGR of 16.1%, and is expected to reach R115 million in 2010/11. With R33 million spent in 2006, hardware expenditure is expected to increase to near R50 million by 2010/11 at a CAGR of 10.2%.

**Figure 178**  
**Mpumalanga ICT expenditure split by ICT category (R'000)**



Source: BMI-T, 2009

At R127 million, communications expenditure amounted to 49% of the total Mpumalanga provincial government's ICT budget in 2007. That figure is expected to increase to R149 million in 2010/11, at a CAGR of 9.7% over the forecast period.

The ICT projects are discussed in the ICT big projects and initiatives section on the next few pages which cover some of the reasons for the ICT expenditure in the years mentioned in the table above.

### ***Mpumalanga ICT or e-government strategy***

Mpumalanga provincial government has a skilled workforce and has established a world class ICT infrastructure in the province. However, they are still facing challenges in enforcing ICT governance. In order to enforce compliance the provincial government will engage heads of departments to make sure that their departments adhere to ICT policies, procedures and standards including the State Information Technology Agency (SITA) Act.

SITA is mandated to leverage ICT as a strategic resource for government, managing the ICT procurement and delivery process to ensure that the government gets value for money, and using ICT to support the delivery of e-government services to all citizens.

### ***ICT issues and opportunities in the Mpumalanga provincial government***

This section discusses a few issues and opportunities in the Mpumalanga provincial government specifically related to ICT.

- Lack of competition in the ICT environment (i.e. Telkom monopoly) is seen as being extremely negative for ICT development.
- The Mpumalanga provincial government needs to take note of globalisation. In other words, in terms of, an information economy, information society and information infrastructure.
- Government should find a better way of spending its ICT budget with regards to viability and cost of using ICTs.
- Quality of training is a major concern and IT training is not currently regulated.
- The Mpumalanga provincial government in partnership with the Universal Service Agency should be addressing the ICT needs of the previously disadvantaged communities. The needs of these communities should be met. Those needs that are limited to the provision of infrastructure should not only be met but should also address other needs such as training. The internet and related technology can be used to solve the education and skills shortage problem.

### ***ICT big projects and initiatives***

#### **ICT security**

The Mpumalanga provincial government has a zero tolerance rule to instances of undermining the integrity of government systems and public service delivery through fraud and corruption. Their aim is to sustain their effort in proactively dealing with cases of fraud and corruption where this phenomenon rears its ugly head. In the 2007/08 financial year, the Mpumalanga provincial government will enhance their capabilities in forensic investigations and will create greater transparency and accountability for performance and computer auditing so that potential threats to the integrity of governance systems are discovered before they cause havoc to service delivery. To achieve this, the Mpumalanga provincial



government intends to establish three units in the Premier's Office, namely, Forensic Audit, Performance Audit, and Computer Audit.

#### **ICT in Mpumalanga schools**

The introduction of Information and Communications Technology (ICT) in public schools received a huge impetus with the launch of the Provincial ICT Strategy. Forty-five schools were earmarked for the introduction of ICT and each school has been allocated a total of 25 computers for the introduction of an ICT laboratory per school. This has cost the department an amount of R9,5 million. The rollout to the next 150 schools will take place over the MTEF (Medium Term Expenditure Framework) period from 2007 to 2009.

In 2007 the NEPAD e-schools project was launched in Mpumalanga, and two schools, Maripe and Lomahasha, were chosen to participate in the NEPAD e-schools pilot.

This allowed Mpumalanga to benchmark in ICT project performance against the best in the Continent. Secondly, it provided Mpumalanga with an opportunity to leverage international technical expertise in the design and operationalisation of a working model.

This has allowed the Department to design a sustainable Provincial ICT strategy which will be rolled out in 2008/2009 financial year.

#### **Ligbron Wireless Interactive Smart Board Teaching Methodologies**

In a 2007 speech, the minister of education announced that in 2008 they would be launching a massive wireless interactive smart board teaching methodology, conceived within the realm of Provincial ICT strategy.

This high-tech wireless ICT facility would be launched by the department through a partnership with ABSA and the Premier Science Education Award, at Ligbron Academy of Technology, Umzimvelo and Camden Combined Schools in the Ermelo area of Gert Sibande Region.

The intention is to support ICT based interactive learning opportunities for educators and learners through:

- Live transmissions of Mathematics, Science, ICT and Technology lessons to a group of schools in a 40km radius
- Classroom embedded peer teaching and peer mentoring and support mechanism
- ICT-based distance support opportunities for educators and learners in rural schools to improve the quality of classroom lessons.

Each of these schools have met the following requirements

- Local Area Network connectivity
- Internet access
- Hardware and software
- LAN connected cameras

- LAN connected speakers
- Interactive SMART boards
- Reliable electricity supply

Columbus Technologies has been appointed as central server provider, with a responsibility for general software update.

Outcomes for education include:

- Knowledge management and sharing experiences within and between institutions
- Bridging the urban- rural digital divide
- Teacher development and professional capacitation
- Quality teaching and learning
- Math and Science Infrastructure Development

#### **ICT Centre in Emalahleni**

The Education Department in partnership with Anglo Coal was planning to open a Science, Career Guidance & ICT Centre at Emalahleni Municipality. This Centre will provide a 'one-stop-educational-facility' that would stimulate interest in Science and technology and provide information to educators and learners about career guidance, subject choices and job requirements.

The program intends to provide learning opportunities for educators and learners, as well as support schools to evolve into institutions that serve the learning needs of the many partners in the education system.

#### **2008 Policy and Budget Speech**

In the Mpumalanga Department of Education's document '5 Year Strategic and Performance Plans 2005/2006 – 2009/2010', a priority is "To ensure access and provision of ICT at all schools".

The words "ICT plan developed and implemented" are to be found repeatedly for the various schools sectors, under the heading Description of planned quality improvement measures, with the secondary school sector stating "ICT implementation plan has been developed".

In his speech at the opening of the provincial legislature in February 2007, the Mpumalanga premier stated "The introduction of ICT (Information and Communications Technology) in public schools received a huge impetus with the launch of the Provincial ICT Strategy. Forty five (45) schools were earmarked for the introduction of ICT and each school has been allocated a total of twenty five (25) computers for the introduction of an ICT laboratory per school. This has cost the Department an amount of R9,5m. The rollout to the next 150 schools will take

place over the MTEF (Medium Term Expenditure Framework) period from 2007 to 2009.”<sup>15</sup>

In the Mpumalanga Provincial Programme of Action 2008/09, under item 39 Development of Infrastructure to support social development, is the Action Rollout of Information Communication Technology, which includes the following objectives:

- 100 schools are provided with computers at 25 computers per school
- Training of 2298 educators
- Telemedicine established in identified hospitals
- ICT Infrastructure in 53 libraries

### *Mpumalanga District Municipal ICT policies*

#### ***Nkangala IDP***

In the Nkangala IDP for 2008/09, under the heading ICT, it is claimed that “Major strides have been taken in establishing a formidable information and communication technology environment in the District. The District is committed in providing the necessary support to all the Local Municipalities under NDM’s jurisdiction.”

The following is listed as having been achieved by the ICT unit over the previous year:

- In compliance with the National Government’s initiative on Master System Plans (MSP), in October 2007 NDM completed the development of its own MSP Document. However, the recommendations within this framework document still have to be implemented.
- The development of the Nkangala District Municipality Management Information System (NDMIS) is under investigation. The main objective of this system, which should function as an intranet, is to integrate all the systems within NDM.
- The NDM implementation of the Geographic Information System (GIS) was initiated in 2005. Included within development, maintenance and upgrading of all ICT systems within the District there is a need to finalise the development of a fully functional GIS System.

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<http://www.mpumalanga.gov.za/Premier%20Office/Speeches/Speeches007/23Feb07sopa.htm>

### *Systems within the NDM*

ICT-related objectives for the year are as follows:

- To ensure optimum functionality and maintenance of the GIS, EDMS, Intranet, Website, financial and HR and project management systems and other systems
- To ensure compliance of the NDM with e-Government initiative and Electronic Transactions and Communication Act
- To create an environment that enables access to information for internal and external users to view, update and manage data and generate reports
- To give employees access to local networks and the public internet
- To provide the necessary support to all the Local Municipalities under NDM's jurisdiction
- To continuously capacitate the internal users on various in-house systems

In terms of ICT systems development within NDM, the IDP document states that the NDM will compile a database which must seek to detail the availability, condition and performance of ICT infrastructure throughout the District (at the NDM and local municipalities). The enhancement and integration of the current systems will be a main priority. All the findings will be viewed in the context of the NDM's Master Systems Plan. The District will seek to study, learn and apply, where necessary, knowledge gained from best practice. Projects planned and their budgets are listed below:

**Table 87**  
**ICT projects and projected budgets**

Project	Description	Project Location	Funding Source	Budget08/09	Budget09/10	Budget10/11	Indicator	Responsibility
Maintenance of ICT systems		Maintenance of ICT systems		NDM	NDM	120,000	120,000	120,000
ICT Support	Support and capacitation of ICT users	NDM	NDM	80,000	80,000	80,000	Annual training report	Assistant Manager: IT
GIS	Operationalisation of GIS	NDM	NDM	250,000	100,000	100,000	GIS system fully functional by June 2009	Assistant Manager: IT
Disaster Recovery Plan	Implementation and maintenance of DRP/BCP	Emalahleni, NDM	NDM	2,293,000	1,000,000	500,000	Annual report on activities undertaken	Assistant Manager: IT
ICT Access	Development of a media centre	NDM	NDM	120,000	80,000	80,000	Centre developed and functional by June 2009	Assistant Manager: IT

**Table 87**  
**ICT projects and projected budgets**

Voice over IP	Compilation of feasibility studies on viability of a Voice over IP system	NDM	NDM	80,000	80,000	80,000	Feasibility study report concluded by July 2008	Assistant Manager: IT
Implementation of PMS	Assessment and improvement of LM's and District PMS	NDM	NDM	320,000	0	0	Service provider appointed to assess implementation of PMS in Local Municipalities by September 2008	Manager: Corporate Services

**Table 87**  
**ICT projects and projected budgets**

Skills Development	Develop and implement a skills development plan for the District	NDM	NDM	2,500,000	500,000	500,000	Council employees and Councillors trained by December 2008	Manager: Corporate Services
District Gateway ICT	Investigation of the NDM gateway	NDM	NDM	100,000	0	0		Investigation concluded by June 2009
Electronic Project Management System	Updating the Electronic Document Management System	NDM	NDM	500,000				
Skills Summit	Hold a skills summit in the District	NDM	NDM	500,000	0	0	Skills summit held by March 2009	Manager: Corporate Services

Source: BMI-T 2009, Nkangala District Municipality

## MPCCs

The NDM Spatial Development Framework has proposed a fourth order of service delivery centres in the form of a Multi Purpose Community Centres (MPCC) or Thusong Service Delivery Centres. In essence the concept means that a few strategic points/areas are identified throughout the entire NDM area. These strategic points/areas should be areas around major intersections in urban or rural areas, or areas which already have a concentration of population and community facilities situated at a specific point.

A study on the potential number and spatial distribution of Multi Purpose Service Delivery Centres in the NDM area has been conducted with 55 potential sites identified. The table below summarises the number of facilities per municipality and gives an indication of the ratios facilities per population and facilities per km<sup>2</sup> in the District.

<b>Municipality</b>	<b>Population</b>	<b>Number of MPCCs</b>	<b>Population Ratio</b>	<b>Area Ratio Km</b>
Emalahleni	276 412	11	1:25 128	1:272
Thembisile	258 875	10	1:25 887	1:279
Dr JS Moroka	243 316	11	1:22 119	1:141
Steve Tshwete	142 769	9	1:15 863	1:493
Delmas	56 210	6	1:9 368	1:292
Emakhazeni	43 007	8	1:5 375	1:659
NDM	1 020 589	55	1:18 556	1:342

Source: BMI-T 2009, Nkangala District Municipality

The objective would then be to ensure that whenever funding becomes available for the provision of additional facilities, e.g. schools, clinics etc. the relevant service provider would as a first priority seek an opportunity to provide such facilities at the Multi Purpose Community Centres. As these centres are completed, more and more centres can be established throughout the NDM area.

Based on the example set by the Nkangala District the concept was expanded to the remainder of Mpumalanga Province by way of an initiative launched by the Premier's Office.

At Provincial level the initiative is coordinated by the Government Communications Directorate which conducts the initiative in terms of a directive contained in a Cabinet Memorandum from 1999. In the President's State of the Nation address of 1999 it was stated that the national objective was to have at least one MPCC developed per District. In the 2004 State of the Nation address the President stated that the objective has been amended and that the target is now to have one facility per local municipality by 2014. Consequently, the NDM has currently identified 14 top priority MPCCs, of which there must be at least one MPCC per local municipality.

Objectives for the MPCC programme are listed in the IDP:

To conduct an MPCC Audit and formulate a development strategy and programme



To develop an implementation plan for the provisioning of resources through MPCCs

To facilitate and coordinate the provision of community facilities and infrastructure at Multi Purpose Community Centres throughout the NDM area

To ensure that any form of development taking place within a municipality will be guided and informed by the regional development trajectory of the District and the Province as a whole

To compile and review Land Use Management Systems for each Local Municipality on the basis of the reviewed Spatial Development Frameworks

To investigate the formulation of a single piece of planning legislation for Mpumalanga Province concerning Land Use Management and the streamlining thereof

To facilitate the review of the process of processing development applications in order to eliminate bottlenecks.

To compile and update cadastral base maps for each town/settlement in the District

### **Strategies**

The development of MPCCs throughout the NDM has commenced. The process involves the identification of unused government buildings and the construction of new centres where necessary. However, caution has to be exercised in ensuring that the usage of the already existing structures does not perpetuate the old order but reflect one of the principles of the NSDP in ensuring that development focuses on people rather than places.

It is planned to fund the establishment of MPCCs by the private sector wherever possible, as can be seen in the budget below.

### **GIS**

There is a need to finalise the development of a fully functional GIS System. The NDM implementation of the Geographic Information System (GIS) was initiated in 2005.

The budget for ICT initiatives in the NDM is given below:

Table 89 ICT programmes and budgets for Nkangala DM							
Project	Description	Project Location	Funding Source	Budget 08/09	Budget 09/10	Budget 10/11	Indicator
Mhluzi MPCC	To finalise the establishment of an MPCC in Mhluzi	Steve Tshwete	BHP Billiton	300,000			Number of jobs created by June 2008
Lynnville MPCC	Provision of basic infrastructure for community meetings for the disabled in Lynnville MPCC	Emalahleni	Public Works	3,000,000			Infrastructure in place by June 2008
Marapyane MPCC	Development of Marapyane MPCC	Dr JS Moroka	DL&H				Progress report submitted quarterly
Wonderfontein MPCC	Development of Wonderfontein MPCC	Emakhazeni	DL&H				Progress report submitted quarterly
CLARA Investigation	Investigation of the impact of CLARA on planning	NDM	NDM	100,000			A report on the impact of CLARA on planning compiled by December 2007
MPCC Audit	MPCC Audit and formulation of implementation strategies	NDM	NDM	300,000			Progress report submitted bi-annually
GIS	Updating of GIS data	NDM	NDM	2,000,000	2,000,000	1,000,000	Full GIG functionality in 2010

Source: BMI-T 2009, Nkangala District Municipality

## ***Ehlanzeni IDP***

In the Ehlanzeni IDP document, under post and telecommunications, the following Problem statement can be found:

“A large section of the District area is provided with formal telecommunication facilities. Eighty percent of the inhabitants rely on communication services such as cellular phones, while 20 percent rely on public and landlines provided by Telkom. Telecommunication is well provided in big institution such as hospitals, schools and government departments. “

Objectives resulting from this are:

To promote the basic communication infrastructures are within reach of all communities in the District.

- Strategy A: Facilitate the provision of public phones to all communities of Ehlanzeni
- Strategy B: Facilitate the provision of post offices within access to all communities
- Strategy C: Provide communication services to communities / villages without efficient transport and communication services

A majority of households living in the municipal area have access to basic communication infrastructure such as postal and telecommunication services. There is a need to sensitise key role players especially Telkom to extend its services to rural communities. In terms of the Mpumalanga Spatial Development Perspective 91% of the population have access to telecommunication system. The district is also facing a challenge on the establishment of fan parks stadiums which requires telecommunication networks.

### **MPCCs**

Under Priority Issue/Programme 22: “Organisational Infrastructure and Assets” and the Programme Objective “Implement and upgrade the operation systems”, the Project Objective is “Accessibility to government system”, and the Key Performance Indicator is the “Proper functioning of MPCC”, for 15 communities in the district.

### **Education**

Under the Programme Objective: “Promote the provision of effective education to all learners and equip people to lead a meaningful life”, the Project Objective of installing a computer centre was listed for 58 schools, both primary and secondary, under the Key Performance Indicator “Adequate and safe infrastructure provided to enhance quality education”.

The budget for ICT implementation in the EDM is given below:

**Table 90  
ICT programme and budget for Ehlanzeni DM**

Priority Issue[Programme]	Objective	Measures		Target	Period	Projected Programme Budget ('000)		
		Output	Outcome			2007 / 2008	2008 / 2009	2009 / 2010
KPA: Institutional Transformation								
Organisational Infrastructure	To improve and update information and communication Technology to ensure efficiency and effectiveness.	ICT Plan	implementation	Uptime availability and function of the system	98% uptime and running of the sys.	30-Jun-10	R 2,375,000	R 500,000

**Table 90  
ICT programme and budget for Ehlanzeni DM**

KPA: Infrastructure and Services								
Post and Telecommunication	To ensure that a basic communication infrastructure is within reach of all the inhabitants in the municipal area		Number of projects on basic communication infrastructure implemented	Improved access to communication by inhabitants in the municipal area	30-Jun-10	R 0	R 0	R 0

Source: BMI-T, 2009, Ehlanzeni District Municipality

## **Gert Sibande**

Extract from Gert Sibande IDP 2008/09 page 23

### **“1.6.3 ICT Services**

“It is the backbone of any organisation aspiring to grow, hence as part of the Global Village where information and communication are equally vital we must ensure that all documentation and records are stored electronically. Special emphasis should thus be placed on proper maintenance and upgrading of IT equipment. Safeguarding of data is also vital. This does not only apply to Gert Sibande as a District Municipality, but the responsibility does further impact on the working relations with the Local Municipalities in the maintenance and upgrading of their IT equipment and especially the safe backup of data.

“Key Issues regarding administration of proper ICT service includes among others the following:

- Ensuring that computers are upgraded on generally accepted intervals (3 years for laptops, 4 years for desktop computers and 5 years for printers).
- Software upgrades to ensure maintain a high standard.
- Accepted data storage, backup and recovery programs and procedures.
- Enable optimally functional District wide GIS”

Gert Sibande ICT Programmes and Projects (IDP 2008/09)

### 1.3.1 GSDM Programmes and Projects *continued*

PROJECT	PROJECT DESCRIPTION	FUNDING SOURCE	BUDGET (R'00)			
			2008/09	2009/10	2010/11	TOTAL
<b>INFORMATION COMMUNICATION &amp; TECHNOLOGY</b>						
GIS	GIS System for the local municipalities and the District	GSDM	500 000	500 000	500 000	1 500 000
Linkage of Municipalities	Establishment of a communication link between the District municipality and all the 7 Local Municipalities, of which three (3) are linked to the District.	GSDM	400 000	400 000	400 000	1 200 000
On-site and off-site back up system for the district.	Two back-up servers for the District: One on-site for the purpose of Business Continuity and the other for Disaster Recovery	GSDM	1 000 000	500 000	250 000	1 750 000
Business Continuity Plan	An 80 KVA generator.	GSDM	100 000			100 000
<b>TOTAL INVESTMENT ON ICT</b>			<b>2 000 000</b>	<b>1 400 000</b>	<b>1 150 000</b>	<b>4 550 000</b>

Gert Sibande ICT Objectives, Strategies and Performance Measures (IDP 2008/09)

**2.2 DEVELOPMENTAL OBJECTIVES, STRATEGIES AND KEY PERFORMANCE INDICATORS (KPIs)** *continued*

**2.2.1 Municipal Transformation and Organisation Development: Objectives and Strategies**

IDP INTEGRATED DEVELOPMENT PLAN 8.4

PRIORITY AREA	OBJECTIVE	STRATEGY	INDICATOR	MEASUREMENT SOURCE FREQUENCY	BASELINE	TARGET 2008/09	ACCOUNTABLE OFFICIAL
	To ensure that all Council meetings do take place as per their respective schedule.	Provide agendas of high standard and informative to harness proper decision-making	No of Council Meetings successfully held	Council Notices	4	4	ED:CS
	To maintain and streamline IT functioning	Implement IT based on IT solutions strategy and adopted IT policies	Quarterly Report on compliance to Council policies	Quarterly Report	0	4	ED:CS
		Enable District Wide GIS	Number of local municipalities linked into the main GIS System	Project Reports bi-monthly	0	7	ED:ITS
			% services with key data captured in a management and GIS	Quarterly report	0	4	ED:ITS
		Ensure efficiently and optimally functioning IT Hardware that satisfy the requirements of Council	No of IT hardware maintained and purchased	Quarterly Report on status quo of IT facilities	0	4	ED:CS
		Identify IT software that needs to be purchased and upgraded as per Council IT requirements	No of Software purchased and repaired	Quarterly Report on IT Software repairs and procumbent	0	4	ED:CS

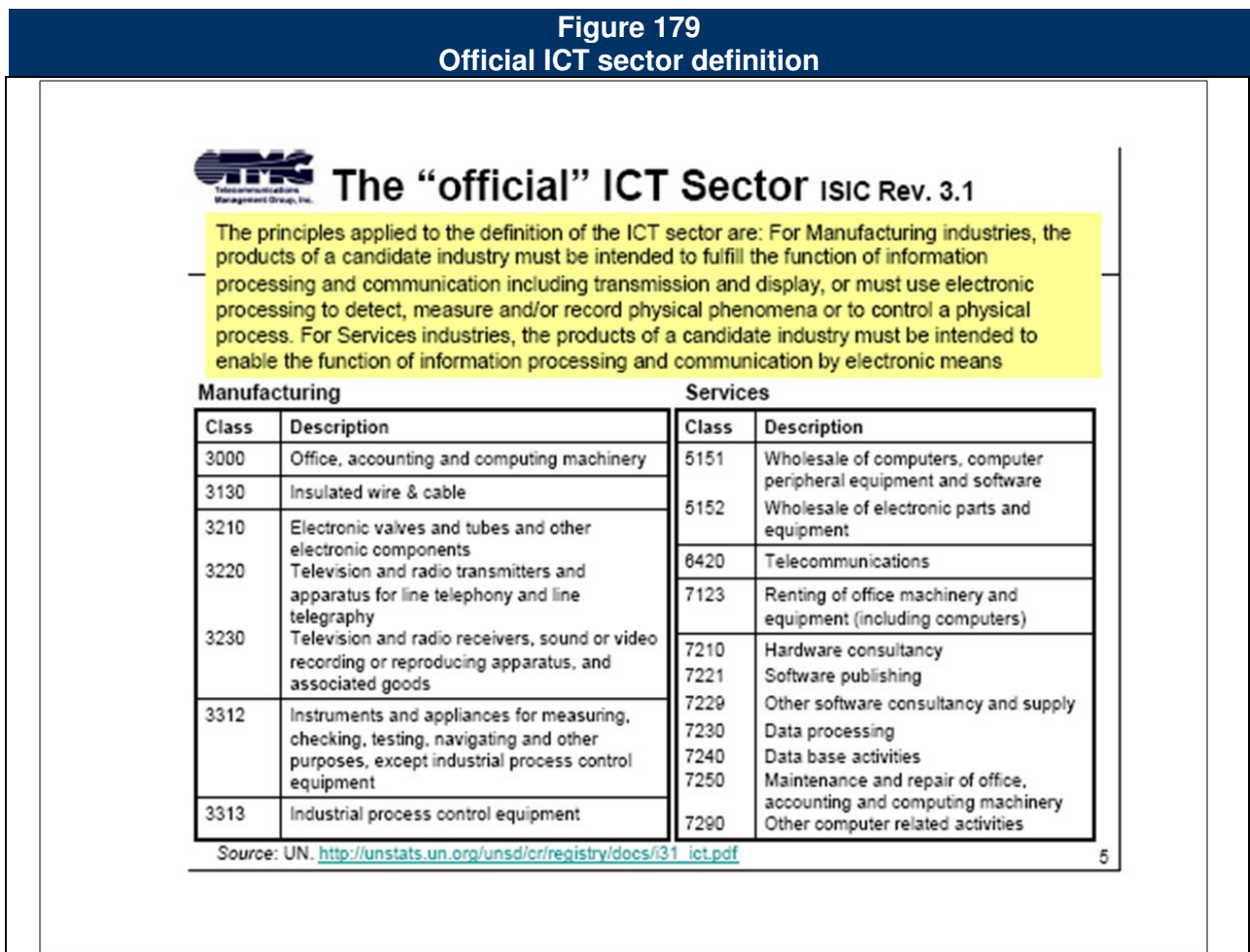


## ICT sector

The following were identified by the Millennium Declaration as indicators of how ICTs are enablers of social and economic growth and how they impact on development and enhancing development opportunities:

- ICTs as a percentage of Gross Domestic Products (GDP)
- Contribution of ICT investments to economic growth
- Number of workers in the ICT sector

The picture below shows the official ICT sector definition.



### ***Number and size of companies in the ICT sector***

The table below shows an estimate of the number of companies, by industry sector, in the broader ICT sector. Mpumalanga makes up about 4% of the ICT companies in Mpumalanga

**Figure 180**  
**ICT companies breakdown**

<b>Sic Description</b>	<b>ICT companies in Mpumalanga</b>	<b>% of SA total</b>	<b>S A Totals</b>
Maintenance + repair of office, accounting + computing machinery	14	5%	309
Mfg of electronic valves and tubes and other electronic components	1	2%	60
Mfg of insulated wire and cable	7	6%	127
Mfg of office, accounting and computing machinery	46	3%	1812
Mfg of tv+radio receivers, sound/video recording/reproduc. apparatus	5	4%	118
Mfg of tv+radio transmitters+apparatus for line telephony+telegraphy	1	4%	24
Mfg radio,television,communication equip,medical,optical,watches etc	4	2%	217
Post and Telecommunication	30	4%	743
Renting of office machinery and equipment (including computers)	36	4%	1011
Software consultancy + supply	17	1%	1185
Telecommunication	1	1%	88
Wholesale trade in office machinery+equipment including computers	84	3%	3309
<b>ICT Total</b>	<b>246</b>	<b>3%</b>	<b>9003</b>
<b>Total Number of Companies</b>	<b>21467</b>	<b>4%</b>	<b>556034</b>
<b>% ICT companies in Mpumalanga</b>	<b>1.1%</b>		<b>1.6%</b>

Source: StatsSA, 2007