Title

The use of e-commerce by rural communities for small business development

By

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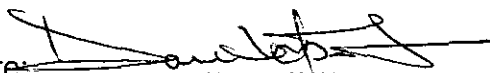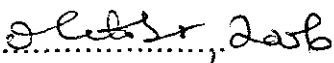

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Abstract

The emphasis on economic development of rural communities, especially small businesses within it has attracted the attention of most local, regional and national governments and non governmental agencies alike. As we move towards technology-oriented global market, community development now becomes a veritable strategy for "pushing back the frontier of poverty" and maintaining socio-economic stability. This research argues that the deployment and use of appropriate e-commerce technology to facilitate this strategy is useful, and possibly, more suitable than any other tool or strategy. The research further examines the opportunities offered by e-commerce for small business development within the Western Cape. A framework that describes how e-commerce can support the addressing of the specific developmental needs of this community was developed. Six pilot communities involved in the pilot for the Cape Gateway Access Project initiated by the Centre for e-Innovation (CeI) of the Provincial Government of the Western Cape were investigated to find out how appropriate technologies are put to use and how they can be effectively deployed to promote entrepreneurship in these rural communities.

The findings of this research reveal that the use of e-commerce by rural communities is a bit complicated. It is found that the availability and use of appropriate e-commerce technologies extend beyond provision of access, to provision of support outside technology and multi-stakeholder approach to addressing the economic situation of rural communities. The findings provide the basis for the recommendations and conclusions drawn in this research. However, the few entrepreneurs identified within the communities are found to be at different stages of e-commerce use. In general, most of the community members are unconsciously engaged in some form of e-commerce ranging from B2B, B2C and G2C[1], though not as significant as one would have envisaged.

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[1] Government to Citizen

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Chapter One

Introduction and Background

1. Introduction

This research investigates small business use of *e-commerce and how it can be used for the socio-economic development of Western Cape rural communities. With new technologies, growing competition and globalisation of market activities, e-commerce has now emerged as a viable business tool for new business start-ups and for the sustenance of existing businesses.*

To conduct this investigation, it is important to understand the background of the research problem through study of the literature. The characteristics of rural communities and small businesses are dynamic and uniquely different *from big businesses in metropolitan urban areas. In this regard, the developmental infrastructure that supports the ability of rural communities to establish and manage small business becomes an important issue for broad-based economic empowerment. There is a rapidly increasing body of published work dealing with these issues, but the purpose of this study is to focus on one especially well-developed case: the six "rural e-communities"* established by the Centre for e-Innovation (CeI) of the Provincial Government of the Western Cape (PGWC).

The six communities are pilot for an initiative designed to promote the use of Information and Communications Technologies (ICTs) as tools for building knowledge and creating opportunities, especially to empower rural and previously-disadvantaged communities in the Western Province to confront the challenges of poverty and development. The project is managed and administered by selected members of the communities referred to as "e-Community forums".

This chapter explains the steps and methods followed to achieve the objectives of the study and highlight the remaining chapters, thus describing the structure of the thesis.

1.1 Glossary of terms

Important terms relating to rural communities, e-commerce and business activity are often used in subtly different ways; the glossary below clarifies the main terms used in this thesis:

- **Business-to-Business (B2B)**: this refers to businesses doing business with other businesses. The term is used to describe different kind of business relationships that are created and managed for different purposes.

- **Business-to-Consumer (B2C)**: is a business transaction that occurs between a business and a consumer. This term also describes business activity that provides goods or services to consumers.

- **E-business**: this broadly describes the use of electronic technology to support business process.

- **E-commerce**: means doing business electronically at a more specific level, for example communications, buying, selling and marketing of products and services.

- **Information and Communications Technology (ICT)**: refers to an umbrella term use to describe computer-based information systems and communications systems that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and

so on, as well as the various services and applications associated with them to process, transmit and store data and information.

- **Rural Community:** refers to a group of people co-located in small local areas, outside urbanised areas.

- **Small Medium and Micro Enterprise (SMME):** may be defined by the number of employees, ownership (these businesses are normally privately owned corporations, partnerships, or sole proprietorships), annual turnover and industry situation (not dominant in its field of operation).

1.2 Research Background

Lack of adequate telecommunication infrastructure has been identified as a major challenge in rural areas generally (Cullen, 2003:249). This is also likely to be a factor in Western Cape rural communities, and it is interesting that there is already a project in each of the six communities (Bitterfontein, Elim, George, Oudtshoorn, Struisbaai and Van Rynsdorp) promoted by the Cel, as shown in Figure 1.0. Business development in these communities is more challenging than in urban areas that have infrastructural support. Putterill (2004:385) mentions that developing countries, including South Africa, are struggling with lack of access to ICT infrastructure. This challenge the effort to develop small businesses located mainly in rural communities, because they need access to information technology for socio-economic development, just as urban areas do. It is widely presumed that the availability of ICT infrastructure will stimulate the development of an African economy; at this early stage it is assumed here that this is not necessarily true.

The proposition that Small Medium and Micro Enterprises (SMMEs) are an important part of developing economies (Scupola, 2002) makes this research important, because they are seen to contribute to economic growth and employment. Therefore, this research project investigated rural and

previously-disadvantaged communities and small business needs, and provides a conceptual framework on how appropriate technologies can be accessed and deployed to fulfil socio-economic needs of these communities in the Western Cape. This was done specifically with the six projects established by the Cel.
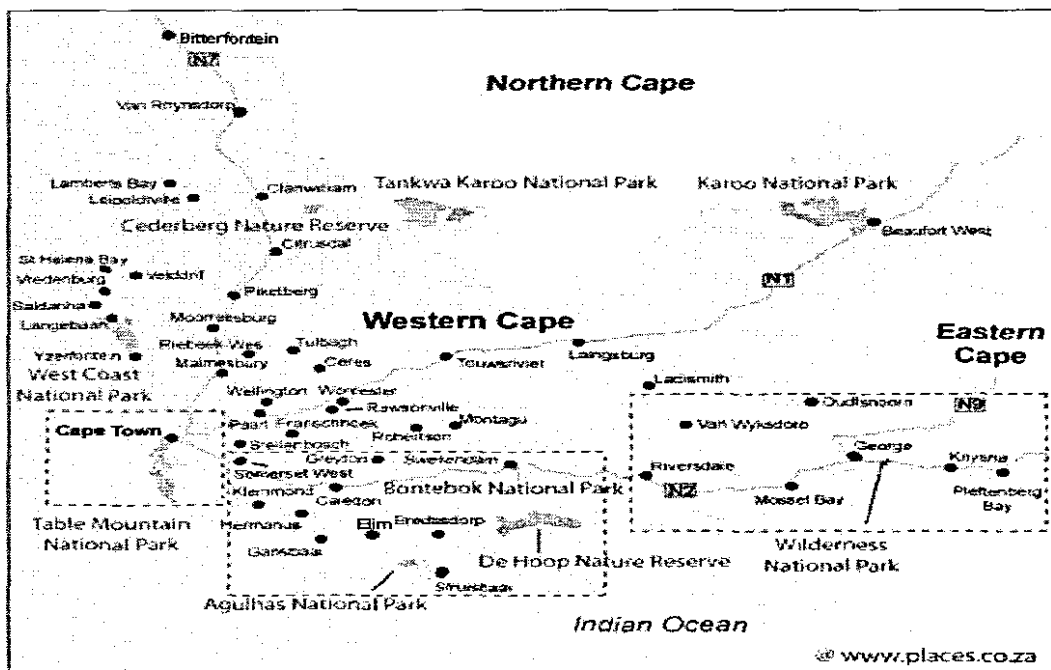
Figure 1.0: Map of Western Cape (**Source:** www.places.co.za)

1.3 Research Problem

Lack of access to appropriate ICTs is widely believed to be an impediment to small business success. ICT accessibility and usability is especially problematic for small businesses operating in rural communities. Therefore, investigating appropriate e-commerce technology that might support small business enterprise development becomes important for socio-economic development in the rural communities of the Western Cape.

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1.4 Research Objectives

The overall objective of this study is to understand the challenges and opportunities facing rural and previously-disadvantaged communities of the Western Cape arising from disproportionate access to ICT infrastructure.

Specific objectives of the study are to:

- Review global literature on rural communities, SMMEs and e-commerce.
- Develop a framework that describes the relationship that exists between rural communities' use of e-commerce and small business development.
- Compare the development opportunities offered by e-commerce in the Western Cape with world trends.
- Make recommendations on how rural communities can identify and utilise appropriate e-commerce technology for small business development.

1.5 Research Design and Methodology

This research uses both qualitative and quantitative methods. Johnson and Christensen (2003) refer to this approach as the "mixed research" method. It was considered appropriate because of the potential it offers in gaining equal but parallel value from data obtained using both qualitative and quantitative methods (Casebeer & Verhoef, 1997).

- The qualitative part of the research was conducted through personal interviews with relevant role players and managers. The aim was to understand how rural small businesses can access/benefit from appropriate e-commerce technology (Pease & Rowe, 2004).
- The quantitative part was conducted by administering semi-structured questionnaires (Neuman, 2003). This method did help in determining the number of people using the Cape Gateway access centres,

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frequency of uses and the opinions of non-business owners as to the impact of ICTs to community development and growth potential.

A snowballing sampling technique was used to select respondents in the case of the qualitative method; whereas the sample for the quantitative method was purposively selected with the assistance of the e-community forum members at the different sites of the study.

1.6 Research Questions

Email and mobile phones are clearly important, but there are many other technologies that might assist SMMEs in rural communities. In order to understand them and their potential we must address a number of research questions need to be addressed. The overall and subsidiary research questions are presented below.

The overall research question is as follows:

What is the development potential for rural communities arising from e-commerce supported small businesses?

This question can be addressed by means of four investigative questions:

Q1   What e-commerce technologies are appropriate and available for SMMEs in rural communities?

Q2   What are the benefits of appropriate e-commerce technology to SMMEs in rural communities generally?

Q3   What is the impact of appropriate e-commerce technology on small business development?

Q4   What is the correlation between appropriate e-commerce technology and development in rural communities?

1.7 Research Limitations

This research is limited to six rural and previously-disadvantaged communities, out of the many others in Western Cape. It focuses on the different access to and the use of appropriate ICTs for the purpose of small

businesses and the community they serve. Despite the limitation of time, 150 questionnaires were administered and a significant number (16) of interviews were conducted, out of the 24 initially targeted.

1.8 Research Significance

The aim of this research is to identify relevant issues facing rural and previously disadvantaged communities and small businesses and provide them with e-commerce framework. This framework would be useful in developing and managing information needs of small businesses. The study will further contribute to and enhance the academic body of knowledge concerning SMME's application of e-commerce.

1.9 Expected Outcomes, Results and Contribution of the Research

The framework that emerged from this research is available to all stakeholders who are involved in developmental projects in the Western Cape. It is hoped that the investigation into small businesses will help stakeholders to understand the following issues:

- Challenges and opportunities facing SMMEs in Western Cape rural communities
- The problem of access to and use of appropriate e-commerce technology.
- Creation of opportunities for further academic research into small business development using e-commerce.

1.10 Chapters review

The purpose of the chapter review is to provide an overview on how this work is organised and some insights on what the different chapters entail.

- **Chapter Two (Literature Review):** Here the different and vast literature that discusses possible use of e-commerce in rural community for the development of small business is considered. The key areas, namely rural community, small business and e-commerce,

are discussed. This leads to a conceptual framework at the end of the chapter, which guides the conduct of the research.

- **Chapter Three (Research methodology):** This chapter describes the methods used in this research: to gain understanding of the subject of study and to collect the relevant data. This is done against the background of other possible methodologies and data collection methods.

- **Chapter Four (Findings):** The outcomes of applying the methods described in Chapter two are presented here.

- **Chapter Five (Analysis and Discussions):** This chapter analyses and discusses the findings obtained, and answers the research questions raised earlier, and relates the findings to the conceptual framework.

- *Chapter Six (Recommendation and conclusions):* This research led to useful conclusions that are presented in this final chapter. It is recommended that similar ICT projects can address poverty and boost economic activities if they recognise the active participation and involvement of community members. Further areas of possible future research are identified and highlighted.

1.11 Summary

The steps and methods to be followed to achieve the objectives of this study are briefly described above. The other remaining chapters, which describe the structure of the thesis, are also highlighted here. The next chapter discusses the literature that relates to the areas that this study attempts to investigate.

Chapter Two

Literature Study

2. Introduction

This chapter considers a number of literatures obtained through search from different databases (Emerald, EbscoHost, and so on) available on the university library network. Further literature was derived from cross referencing of other materials obtained. Books and different search engines on the Internet were also used. A substantial amount of material was obtained; hence a selection of relevant and best literature was necessary. The search, though focusing on some key areas, led to some interesting materials that try to discuss the issues in a more general form. Topics such as Information Communication Technology for Development (ICT4D), and Internet and poverty reduction cropped up, which provided a wider perspective to the study area.

The relevant literature selected and reviewed discusses rural community and how e-commerce is utilised as a tool for small business development. The review is focused on the characteristics of rural communities, such as barriers and opportunities that the use of e-commerce offers and how they interplay to create an enabling environment for economic and small business development within it. Furthermore, the literature shows that the unique nature of rural communities requires the provision of appropriate ICTs, which is critical to the use of e-commerce. The outcome of the review culminated in a conceptual framework that summarises the roles of each element discussed.

The review of literature is presented thus:

2.1 Rural community

Rural communities can be categorised or identified based on factors such as economic activity, population size, distance from large cities and access to infrastructure. Interestingly, some elements of the categorisation describe some communities within urban areas of South Africa, which were previously denied opportunities as a result of apartheid (Polity, 2001). Hence, for the purpose of this research these communities may be considered as 'rural' which are termed as 'previously-disadvantaged communities'.

Rural communities suffer from a number of disadvantages (Ashley & Maxwell, 2001:340, Rahman & Westley, 2001:556):

- Poor infrastructure
- Lack or limited telecommunication services.
- High telecommunications cost, where it is available.
- Lack of access to product market.
- Non-existent or very limited skilled persons.

The characteristics mentioned above and others described by Wiggins and Proctor (2001:433), as shown in Table 2.0, are likely to change due to technology, market liberalisation, improved communication infrastructure and rise in population.

	Peri-urban zones	The (middle) countryside	Remote rural areas
Good natural resources	Market gardening & dairying Daily commuting to the city Weekend recreation activities Manufacturing industry may 'deconcentrate' from city proper into this space	Arable farming & livestock production. specialised. with capital investment. producing surpluses for the market [Same for forestry. fishing. mining. quarrying] Tourism & recreation Some crafts By-employment in rural industry? Migration	Subsistence farming. with only the production of surpluses of high-value items that can bear transport costs Crafts & services for local markets Tourism & recreation Migration
Poor natural resources	As above: NB: Quality of natural resources not so important since capital can be used to augment poor land – e.g. by irrigation. fertiliser – when needed for intensive farming	Probably lightly settled Extensive farming. probably livestock. Few jobs Tourism & recreation Some crafts Migration	Subsistence farming. low productivity. Surpluses very small or nil Crafts & services for local markets Tourism & recreation Migration

Table 2.0: Rural diversity: characteristics and likely activities (**Source:** Wiggins & Proctor, 2001).

In developing countries, rural communities are increasingly becoming relevant in local, national and, to some degree, global markets because of their uniqueness (Keane, 1990:292). One can argue that rural communities, to a reasonable degree, provide urban communities both economic and cultural support. For these and other reasons, finding ways to make rural communities viable is critical.

2.1.1 Rural community development

The deprivations suffered by rural communities require that policies and strategies be developed, which can create opportunities for development (Ellis & Biggs, 2001:441). The International Fund for Agricultural Development

(IFAD) *in its rural poverty report of (2001) mentions that government* and development agencies should recognise that rural communities are potential agents of change and can play a significant role in determining social and *economic outcomes in developing countries.* These and other issues require urgent attention of governments, especially in developing countries, to have plans and strategies that attempt to tackle rural community development.

Ashley and Maxwell (2001:418) consider that a typically successful rural development strategy has five basic guiding principles:

- *Recognition of the great diversity of rural situations.*
- Response to past and future changes in rural communities.
- Consistency with wider poverty reduction policy.
- *Reflection of wider moves to democratic decentralisation.*
- Making the case for the productive sectors in rural development, as a strategy to both maximise growth and to reduce poverty.

Considering the aforementioned, the South African government has a rural development strategy (Polity, 2001) described below, which provides a *roadmap for accelerated rural community development.* The strategy involves:

- Creating structures that will allow setting of development agendas, *influence infrastructure investment programme and be fully involved in* maintaining and ensuring service delivery.
- Using government commitment to development to engage *communities fully in developmental projects, which will spur growth.*
- Providing the enabling environment for capacity building in development process.
- *Providing access to information for planning and implementing* development projects and programmes.
- Appointing community development facilitators with the responsibility of *ensuring that government and the communities engage adequately.*

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- *Striving to ensure fair and equitable access to social welfare and basic infrastructure.*

Another key strategy is the facilitation of information-savvy rural communities through the use of ICT for the purpose of small business development and development in general. This is important because "information poverty" is held to be responsible for the inability of rural communities to earn a living and create opportunities for development (Kenny, 2000:25).

A number of studies indicate that ICT is now an important part of development (Pigato, 2001:2; Tongia, Subrahmanian & Arunachalam, 2005:18). Among the many developmental roles of ICT – improve access to health care, education, eradication of poverty and empowerment - the access to information is critical (Kamel & Hussein, 2001:120).

2.1.2 ICT implication in rural community development

The development of rural communities is arguably dependent on community members' access to understandable information, without which it will affect other development efforts (Kiplang'at, 1999:115). Therefore, ICT is a vital tool for rural development. Rahman and Westley (2001:558) mention that ICT is crucial to the development of small businesses in rural communities and has the potential to bring about poverty reduction. International Telecommunications Union (ITU), in its' world telecommunication development report of (2003) states the following roles that ICT can play in bringing development:

- Increase access to market information and reduce transaction costs for poor (rural) farmers and traders (small businesses).
- Increase efficiency, competitiveness and market access of developing country firms (especially rural small businesses).
- Enhance the ability of developing countries (rural communities) to participate in global economy and exploit comparative advantage in factor costs.

It is assumed that the use of e-commerce in rural communities will provide small businesses and entrepreneurs with competitive advantage through better access to global markets. The UNCTAD report (2003:63) on e-commerce and development indicates that there are no policies and strategies that encourage the development of entrepreneurial activities in rural communities, yet the development of such policies could contribute directly to small business development. The acceptability and usability of the technologies to rural communities is likely to grow, but this is highly dependent on its format and affordability (Tongia, Subrahmanian & Arunachalan, 2005:39). This could be a challenge to small business development.

Further, a critical factor among others that affects rural community development is the lack of established ICT infrastructure (Mansell, 2002:319). However, ICT infrastructure development and provision alone does not guarantee accelerated economic development and social inclusion, but change agents are needed that are capable of deploying responsive and relevant strategies (IFAD, 2001). Nevertheless, Proenza, Batisdas-Buch and Motero (2002:7) argue that e-commerce has the potential to make a positive impact on the economy of rural communities through small business development.

2.2 Small business

In addition to the definition of small business earlier provided in section 1.2 of this thesis, other definitions of small business vary by country and industry. A small is sometimes referred to as 'Small and Medium Enterprise (SME)'. However, in South Africa it is referred to as 'Small, Medium and Micro Enterprise (SMME)', and is defined as very small and micro enterprises that have less than 10 employees, small enterprise that has less than 50 employees and medium enterprises having between 50 to about 249

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employees. Furthermore, the definition includes revenue (turnovers) and asset levels (DTI, 2003).

Small businesses in Africa and most countries of the world are an essential element of economic development, wealth creation and sources of new employment opportunities (Lawson, Alcook, Cooper & Burgess, 2003:265). They are increasingly important to economic development of rural communities, and a substantial part of growing national economies of developing countries (North & Smallbone, 2000:90). These essential contributions of small businesses have attracted the attention of governments and policy makers for sometime now (Thomas, Packman, Miller & Brooskbank, 2004:402). The contribution of small businesses to economic development in South Africa and, to the Western Cape in particular, is shown in Figure 2.0 below in terms of gross domestic product (GDP) and employment. The figure shows the annual review of contribution made by small businesses to national economy by the Department of Trade and Industry's (DTI) 2004 report. The report mentions that SMMEs contributed about 40% to GDP. This is significant and clearly shows the critical role that SMMEs are playing in addressing the challenges of development in South Africa.

Historically, small businesses are considered to be flexible and easily adaptive in nature (Fillis, Johansson & Wagner, 2003:338), which makes it easy for new entrants. However, these features and similar others are constraints to small businesses to exploit their potentials (MacGregor & Vrazalic, 2005:521). Arinaitwe (2006:172), Cook (2001:20), Mambula (2002:63) and Romijn (2001:65) found that the constraints that affect small business are similar to that of rural communities, these constraints are:

- Lack of adequate and access to finance.
- Lack/inadequate business skills and managerial expertise.
- Short in marketing abilities.

- Structural weakness.
- Poor/lack of physical infrastructure.
- Lack of access to information.
- *Non availability of suitable technology.*
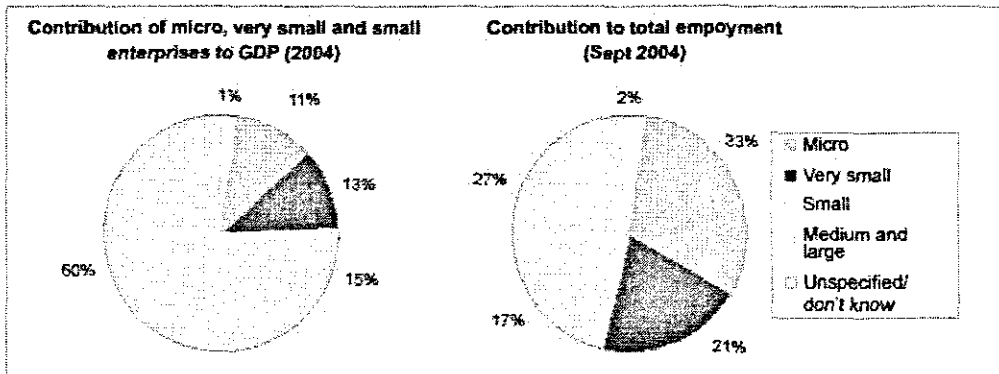
Figure 2.0: The contribution of small businesses to employment and GDP. (**Source:** Annual review of small business in South Africa - DTI, 2004).

Woodworth (2000:20) argues that the constraints above must be overcome for any form of small business development and growth to take place.

Small businesses can support economic development, but it is argued that lack of strategic initiative and policy would lead to negative economic growth (Poon & Swatman, 1999:9). To overcome this, it has been argued that proper plans must be formulated to ensure the stability and survival of small businesses (Stansfield & Grant, 2003:15).

Visagie (1997:660) suggests the following as key areas for support to small businesses:
- Access to advice and assistance.
- Favourable amendments to legislative and regulatory conditions that inhibit development and growth of the small business.
- Access to marketing and procurement.
- Access to finance and loan facilities.

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- Access to infrastructure and accommodation.
- Access to human resource development and training.
- Access to appropriate technology
- Encouragement of partnership between firms.

These key support areas, if provided to small business, will lead to a noticeable growth in business activities within rural communities.

2.2.1 Small business development

As mentioned in the discussions that follow, small business development can be facilitated through carefully-formulated strategies, in addition to the use of ICT. The case of South Africa can be considered here as an illustration. The government of South Africa, in a White Paper on national strategy for the development and promotion of SMMEs; has identified SMMEs as an *important vehicle to address the challenges of job creation, economic growth* and equity in the country (DTI, 1995). SMMEs are also seen to contribute to the black economic empowerment (BEE) and wealth redistribution agenda of the government (Kesper, 1999:139). Furthermore, South Africa's SMME sector is considered to have the potential of redressing the inequalities of the apartheid era (May & Wilkins, 1998). More so, the importance of SMME is realisable through the following strategies as outlined in the White Paper:

- Creating an enabling environment for small enterprises.
- Facilitating greater education of income, wealth and earning opportunities.
- Addressing the legacy of apartheid-based disempowerment of black business.
- Supporting the advancement of women in all business sectors
- Creating long-term jobs.
- Stimulating sector-focused economic growth.
- Strengthening cohesion between small enterprises.

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- Levelling the playing fields between bigger and small business as well as between rural and urban businesses.
- Preparing small businesses to comply with the challenges of an internationally competitive economy.

The evident support of government and development agencies to small business through strategies as mentioned above looks significant and encouraging for rural communities to consider going into small business. However, there are indications that the support programmes and strategies put in place now are not very favourable to rural SMMEs (Rogerson, 2004:771). The lack of access to and use of technology in the current circumstances is a militating factor against the development and growth of small business (Arinaitwe, 2006:168). The South African government acknowledges this and has made concerted efforts to address it. This is evident in the Electronic Communications and Transactions Act of 2002 (South Africa, 2002). The document provides possible ways that rural communities and SMMEs can be supported to use and take advantage of e-commerce through:
- Making facilities and infrastructure available or accessible to such communities to enable the marketing and sale of their goods or services by way of e-commerce;
- Providing or securing support services for such facilities and infrastructure to assist with the efficient execution of e-commerce;
- Rendering assistance and advice to such communities and SMMEs on ways to adopt and utilise e-commerce efficiently for their development.
- Establishing or facilitating the establishment of e-commerce centres for SMMEs; and
- Facilitating the development of websites or website portals that will enable SMMEs to transact electronically and obtain information about markets, products and other assistances.

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Similarly, the PGWC considers it strategic to promote and support rural communities to see and use ICT as a means for socio-economic development. The government's intention is clearly spelled out in the White Paper on preparing the Western Cape for the knowledge economy of the 21st century (DEAA&T, 2001) as follows:

- The establishment and operation of Cape Gateway (started in November 2000), to serve as the single source for the public, businesses (SMMEs and larger enterprises) and other interested parties to integrate collection of information, resources and services provided by various departments of the provincial government.

- Taking advantage of the Internet to create a Cape-on-line network (a "virtual cape"). This will encompass the services offered by Cape Gateway and other related websites for learning, employment, business financing and trade.

- Creating a portal that integrates the above websites and others such as WESGRO[1], Cape Tourism and the database established by CITI[2].

- Providing an enabling environment so that higher educational institutions, through research, will serve as a source of know-how and technology to SMMEs.

- Expanding ICT access to rural communities and formerly disadvantaged communities.

The preceding list shows that e-commerce, amongst other ICTs, is critical for business development, especially in rural communities. Infonomics (2003), stated in a report on the evaluation of the Smart Cape access[3] project that ICT can facilitate small business development; when they suggested the harmonisation of the Smart Cape access project with the "Library Business

[1] Western Cape Investment and Trade Promotion Agency – was established to promote economic development and job creation in the Western Cape Province.
[2] Cape Information Technology Initiative – a private sector initiative to promote Western Cape as a potential for cluster ICT industry.
[3] A project initiative of City of Cape Town to provide citizens free access to information and communications technology. The project sites are mostly situated in the previous disadvantage communities.

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Corners[4] (LBCs)". Nevertheless, studies have shown that the rate of considering and using e-commerce by small businesses in developing countries is very low (Beveren & Thomson, 2002:250). The possible reason for this may not be far from the constraints facing both rural communities and small business in developing countries as earlier enumerated. Other reasons advanced especially in Western Cape are hinged on the basis that the national SMME Strategy is not well articulated and support agencies are not living up to expectations (DED&T, 2004). Even though government concerns itself with providing strategies that could support and facilitate small business development, small business in developing countries are more concerned with survival.

Small businesses are viewed as flexible and quick at adapting to new innovations, these characteristics are significant factors for competing and participating in a globalised market through e-commerce (Mann, 2002). However, the stability and survival of small businesses is still threatened by the same globalisation through e-commerce operations (Jutla, Bodorik & Dhaliwal, 2002:139). Another issue to note is that e-commerce is not likely to give much value to small businesses unless they are ready to metamorphose in relation to technology use (Schlenker & Crocker, 2003:11).

The threats posed by e-commerce are arguably less comparable to the possible benefits. Therefore, we can infer that rural communities should see using e-commerce as an opportunity to generate wealth through engaging in small business. However, a review of e-commerce and its development over time gives clarity over myths and facts surrounding it.

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[4] It is an initiative of the Provincial Government of the Western Cape that serves as a provider for reference material on small businesses, small business support, also providing information and mentoring for SMMEs. There are 53 in Cape Town and 36 in smaller towns.

2.3 E-commerce

The word 'e-commerce' has been mentioned several times in earlier sections of this thesis. A broad definition is provided in section 1.2. However, there are quite a number of sources that have tried to define e-commerce. A critical look at most of these definitions shows a parochial view. Until a universally-accepted definition is adopted, the definition provided by Stavrou, May and Benjamin (2000) aligns well with the researcher's perception of this thesis as to what e-commerce is? They describe it as; "Any form of business or administrative transaction or information exchange that is executed using any information and communications technology".

Before discussing e-commerce and its use by rural communities as a tool for small business development, an understanding of e-commerce evolution is appropriate at this stage.

2.3.1 E-commerce evolution

The evolution of e-commerce is incomplete without a brief look at the history of the PC, Internet and other similar technologies. The advent of the microprocessor made a significant impact on computing, which led to the creation of the micro-computer – "Personal Computer (PC)" - generating an unprecedented growth of information processing capabilities (Miles, 2005:53). Furthermore, Miles mentions that the PC led to many organisations adopting it as a means to automate their functions, considering that this was a revolutionary and widespread technology. A comprehensive development of the Internet provided by Leiner, Cerf, Clark, Kahn, Kleinrock, Lynch, Postel, Roberts and Wolf (1997:103) mentions that it all started as a research network referred to as ARPAnet[5], which subsequently developed to become the Internet. Figure 2.1 is the logical diagram of the ARPANet showing the initial universities and research institutes/centres connected to the network as of 1971. Most of them are in the United States of America.

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[5] Describes a probe switching network spanning some universities and research centres in the United States, created by the Department of Defense. It was meant to serve as a test bed for new networking technologies.

Logical map of the ARPANET, April 1971

Figure 2.1: The logical map of the ARPAnet (**Source:** Gromov, 2003)

The Internet today connects several thousand millions of computers and networks across countries around the world using a standardised set of protocols referred to as transmission control protocol and internet protocol (TCP/IP) to communicate (Todd, 1999:36). The development of World Wide Web (WWW) is considered very significant to the unprecedented growth and widespread use of the Internet (Rao, 1997:229). The ability to view the content of the Internet in a user-friendly and graphical mode using a web browser[6] was a driving force. Subsequently, marketers and businesses saw this as a great opportunity for advertisement and conducting business (Bhatnagar, 1999:289).

However, the history of business transactions using electronic means was recorded earlier than PCs and the Internet. Bocij, Chaffey, Greasey and Hickie (2003:206), mention that as early as the 1960's companies were doing business transaction and exchanging data via electronic data interchange

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[6] Mosaic was the first graphical web browser.

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(EDI)[7] over secure private networks. However, they are quick to mention that early EDI was expensive and propriety in nature, making it unattractive to most businesses. This situation still persists till today. Nevertheless, the adoption of EDI by large businesses brought it to the notice of their small business partners, who were forced to adopt these new technologies in order to sustain their partnership-related business activity. Hence, EDI and e-commerce both involve more than one business and, often, one is small and the other is large. If the rural communities under investigation get into e-commerce it is very likely that they will work with large businesses through this medium. The global reach of the Internet and the development of several ICT technologies that are cheap and compatible with systems across businesses make it attractive for e-commerce (Wilson, 1999:100).

The rapid growth and use of the Internet and new ICT technologies created a lot of perceptions and hype as to its capabilities (Prescott & Slyke, 1997:120). This can be illustrated by the following separate statements made by Matthew Friedman and Nicholas Phibbs, a 12-year old boy from Surrey, United Kingdom;

Friedman (2003) says: "the Infobahn[8] is poised to become the essential medium for small companies to make a dent in global markets, without committing the vast resources that the giants have."

Similarly, Phibbs says: "In the future, computers will shop for us. You will log into a virtual supermarket and order food, they will send it to you the next day. School will change too. You could have school at home and fax your homework in, but you won't make any friends that way. We will have to make friends on the Internet. Libraries will still

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[7] Clark (1998) defined EDI as a standardised electronic form of exchanging data and documents, between organisations or companies, in an automated manner, directly from a computer application in one end to an application in another end.
[8] A name used to refer to the Internet as an information superhighway.

be there, but not many people will visit them anymore
and they will be knocked down." (Leiner, *et al., 1997).*

The possibilities associated with the Internet from the above comments reflect the mixed and often disillusioned perceptions of the technology; resulting in many high expectations and disappointments in e-commerce. It led many to believe and predict that e-commerce will cause the demise of traditional retailers as they are replaced by online companies (Phan, Chen & Ahmad, 2005:8). The Internet, as a major e-commerce platform, went through similar technological revolution life cycle like other technologies (Perez, 2002 cited in Jelassi & Enders, 2005:11). This is captured by Jelassi and Enders (2005:13) using the evolution of NASDAQ[9] (see Figure 2.2) to illustrate the four stages that characterise e-commerce change during the past decade:

- Grassroots of e-business (Irruption) – The Internet is strongly being recognised as a platform for businesses to conduct and transact their business electronically.

- Rise of the Internet (Frenzy) – this is the Internet boom era, with a lot of business start-ups and huge investments in new ventures with the hope of lower cost and higher benefits. The launch of Amazon.com[10] marks a major milestone of this era.

- Crash – The possibilities and practicalities of the technology were stretched to breaking point in adopting it for business transactions. Remenyi, Grant and Pather (2004:24) describe it as a period of less caution and improper business practice, with financial institutions and venture capitalist investing billions without recourse to profits. It was a period referred to as the 'dot.com bubble burst', when most

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[9] National Association of Securities Dealers Automated Quotations – the main USA-based stock exchange for high-tech companies.
[10] One of the early and most successful online retailers till today.

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businesses came tumbling down. A classical example of the dot.com failure was a company called Boo[11].

- Consolidation (Maturity) – This is the emergence period of businesses from the shock that precipitated as a result of the crash. Businesses tried to review what transpired earlier and look at the flaws of the business models they were using. Careful considerations are now made before venturing. However, a more possible and profound use and adoption of e-commerce is likely to mark this era. E-bay[12] is an example of a business that survived the burst and soared back to the boom era.
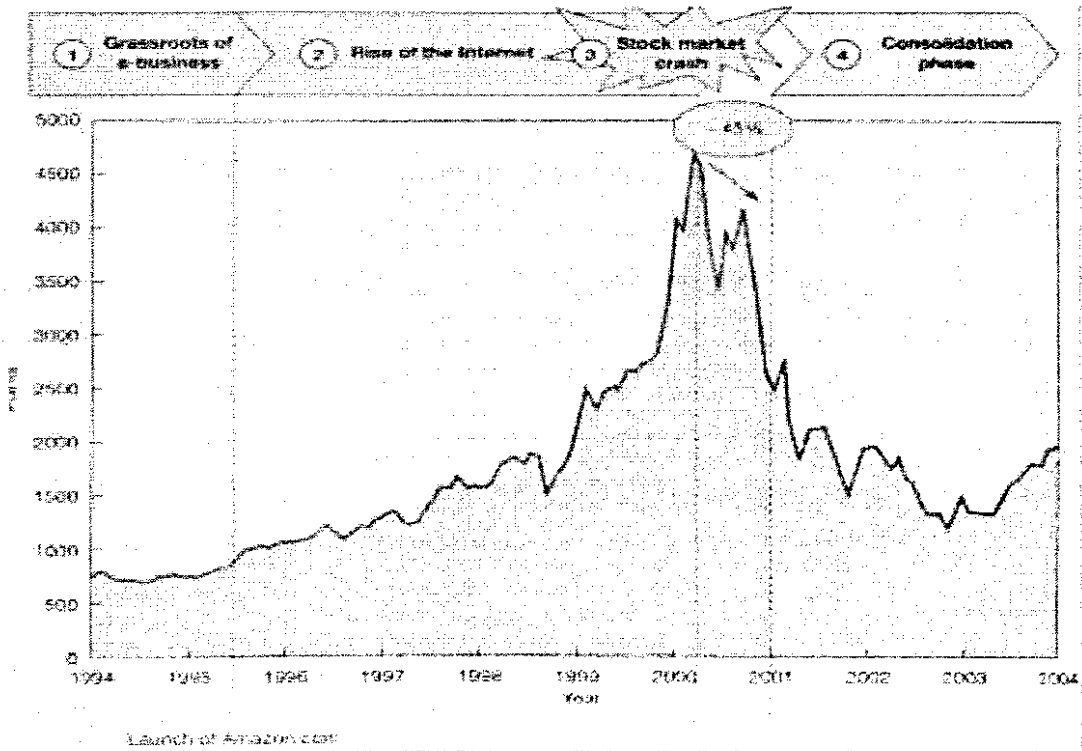
Figure 2.2: Four distinct periods that e-business companies passed through, during the past decade, as reflected in the evolution of the NASDAQ (**Source:** Factiva.com cited in Jelassi and Enders, 2005).

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[11] Boo.com was an online fashion retailer that went down barely six months after its launch, spending $135million within 18 months and was finally sold off for less than $800,000.00. (Chaffey, 2005)

[12] An Internet flea market – where you buy and sell about anything either new or old.

2.3.2 E-commerce impact

Despite the failures of the dot.com firms, more companies (small businesses inclusive) around the globe are leveraging on e-commerce to achieve business efficiencies, which also informs the exponential growth of e-commerce related trade (Karagozoglu & Lindell, 2004:290). A report by eMarketer (2001) notes that global B2C e-commerce revenues in 2001 reached $101.1 billion and estimated to reach $428.1 billion in 2004, as illustrated in figure 2.3. Again, this is significant growth in e-commerce, even though the revenues constitute only 1% of the global B2C (online and traditional) trade (OECD, 2001). Similarly, according to Goldstuck (2006) in South Africa, online B2C transaction show a growth of 20% in 2005 from $71-million (R428-million) in 2004 to $85-million (R514-million). These figures represent a dismal 0.2% of overall B2C market in South Africa.

However, the B2B sector of e-commerce generates more revenue. For example, in the United States, where the most e-commerce transactions globally take place, significant activities occurred in the manufacturing, shipments and wholesale trade, accounting for 21.2% and 13.1% respectively of the total B2B transactions for 2003 (UNCTAD, 2005). The UNCTAD report of 2005 further mentions that similar data is lacking in some developed and most developing nations, making it difficult to capture the global picture of B2B and B2C e-commerce transactions.

UNCTAD (2004), in an earlier report, states that the bulk of revenues for B2C and B2B e-commerce are coming from large firms rather than small businesses. However, at the current growth rate and as more small businesses integrate e-commerce into their business processes, the figures are bound to continue growing exponentially. Therefore, developing nations and small businesses should vigorously pursue e-commerce adaptation as a possible leapfrog pad for business growth and development (Singh, 1999:4).

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Worldwide B2C eCommerce Revenues, 2000–2004 (in billions)

2000	$59.7
2001	$101.1
2002	$167.2
2003	$250.0
2004	$428.1

Source: eMarketer, 2001

Figure 2.3: Worldwide B2C e-commerce revenue, 2000 – 2004 (Source: eMarketer, 2001).

2.4 E-commerce and small businesses

The use of computers for business process has been around for some time. The need for electronic services by customers became a driver for businesses to adopt EDI, which is considered as the early practice of B2B e-commerce (Daniel & Wilson, 2002:331), as discussed earlier. This further pushed businesses to look for possible electronic business opportunities.

The use of the Internet for commercial purposes and the early signs of benefit started showing by 1994 (Poon & Jevons, 1997). This provides some kind of motivation for businesses participating in e-commerce. The adoption of e-commerce by SMMEs is partly motivated by developmental need of rural communities that are striving to be innovative in social and economic activities (Chan & Al-Hawamdeh, 2002:287). However, the crash of a number of dotcoms in 2000, stated earlier, created an era of uncertainty. Still, there was a marked change in perceptions towards e-commerce thereafter (Cloete, Courtney & Fintz, 2002:2; Lee, Katerattanaku & Hong, 2005:16).

Onojaefe and Bytheway (2005) further argue that e-commerce is becoming a vital platform for business and socio-economic development. This reinforces the perceived benefit mentioned earlier as the core motivation that comes with using e-commerce and most SMMEs consider this, when integrating it

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with their business process (Poon & Swatman, 1999:15). Furthermore, Poon and Swatman mention that these perceived benefits can be short-term (direct or indirect), realisable within a few months and long term realisable over a long time. How the perceived benefits relate is illustrated by the framework in figure 2.4. The realisation of e-commerce benefits by small business is an incentive for socio-economic development of rural communities.

	Short term	Long term
Direct benefits	Examples: - Save in communication costs - Generate short term revenues	Examples: - Secure returning customers - Long term business partnership
Indirect benefits	Examples: - Potential business opportunities - Advertising and marketing	Examples: - Ongoing business transformation - New business initiatives

Figure 2.4: A framework of perceived benefits for small business e-commerce (**Source**: Poon & Swatman, 1999:16).

Interestingly, the PGWC has identified this and established various initiatives such as the Cape Gateway, Wesgro and so on (Western Cape, 2001), to provide technology access and stimulate rapid development of the Internet and e-commerce in rural communities.

2.5 Opportunities or benefits of e-commerce in SMMEs

The perceived opportunities such as market access and lower international trade cost are some obvious reasons for the adoption of e-commerce by most SMMEs (Stavrou, et. al, 2000). Other reasons include an improvement in customer services and information exchange with customers, staff and

partners (Chan & Al-Hawamdeh, 2002:280). These are considered as important business opportunities for small business development. Furthermore, the Economic Commission of Africa (ECA) has identified e-commerce as a key area of ICT that can be use for socio-economic development (Esselaar & Miller, 2001).

Other potential benefits of e- commerce can be described a follows:

2.5.1 Market expansion

Chan and Al-Hawamdeh (2002:280) indicate that e-commerce provides SMMEs in rural communities the opportunity to extend goods and services to regional and international markets through the Internet. An earlier report by OECD (2000), shows that in principle SMMEs can take advantage offered by the Internet to enlarge geographical and sectoral markets. Markets that might not have been possible to reach by rural communities and small businesses in the traditional commerce are now possible, challenging the monopoly that multinational companies had in the movement of goods and services across far reaching borders (Networkedintelligence, 1999).

Byrom, Medway and Warnaby (2003:45) reinforce the potential of e-commerce in market expansion, indicating that the various business strategies and diversification that comes with e-commerce use is likely to result in the rural communities of the Western Cape reaching markets within the country and other parts of the world. However, Moodley and Morris (2004:156) contend that most of the evidence on market expansion by small businesses in developing countries as a result of e-commerce activities is not based on empirical observation. Therefore, the assertion remains questionable. Matlay and Addis (2003:322) agree and say that there is a scarcity of empirical studies validating claims that e-commerce can deliver enormous benefits such as market expansion to small businesses. A further threat that e-commerce may pose is that of reverse import substitution, that is, perpetuating business movement from developed to developing countries,

as against the opening of new export market opportunities (Heeks, 2000). This threat needs to be anticipated in order to turn the tide against it, so that e-commerce can benefit rural communities.

Notwithstanding that, the attempt by the provincial government of the Western Cape to introduce the Cape Gateway as a platform to access global resources and markets is commendable. This might enable rural communities and their entrepreneurs to access e-commerce benefits

2.5.2 Business growth

Business growth can either be expansion in business size or increase in revenues (McPherson, 1996:261). There is the possibility of growth for SMMEs that adopt e-commerce. Stavrou, et. al (2000) indicate that e-commerce promotes processes that will possibly bring huge growth in the small business sector. The growth can either be in the form of increased or enhanced channels of contact with customer leading to better relationships or increase visibility attracting new customers (Moodley, 2005).

Owens and Davies (2001:462) describe the growth potential of small businesses using e-commerce as phenomenal. In some instances, small businesses' are said to experience growth due to substantial increase in sales as a result of using e-commerce (Simpson & Docherty, 2004:319). A study of small businesses use of ICT in Botswana shows that majority (75%) of small businesses that intensively use e-commerce had turnovers above $90,000 per annum, whereas 62% of non-users of e-commerce had turnovers less than $90,000 per annum (Duncombe, 2004). This further strengthens the argument that e-commerce use in small businesses can lead to growth.

A note of caution, however, is that the growth tendencies of small businesses are likely to be dependent on the attitude towards e-commerce by business owners or communities (Martin & Matlay, 2003:18). Further, the potential of e-commerce to alter existing business structure could be a challenge to small

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businesses in managing growth (Jeffcoate, Chappell & Feindt, 2002:126). Nevertheless, rural communities and entrepreneurs need to realise the strategic opportunity and necessity of e-commerce in small business growth (Pease & Rowe, 2003).

2.5.3 Lower cost of operation

The low cost of operation has been suggested as an economic benefit that attracts the attention of small businesses to engage in e-commerce (Watson, Akselsen & Pitt, 1998:40). There are some concerns about the benefits to SMMEs in rural communities with no access to infrastructure; low operating cost in this instance does not encourage e-commerce adoption (Lucking-Reiley & Spulber, 2000:62; Standing, Sims, Stockdale, Gengatharen, Standing & Wassenaar, 2004:10). Phan, et. al (2005:8) state that the premise that the entry cost of e-commerce for retail businesses is lower than that of the brick-and-mortar ones; and the possible drastic drop in cost of searching for prices and transactions makes it attractive for small business.

In fact, it is argued that e-commerce can lower cost through increased efficiency in information exchange (Colle, 2004:3). This will bring profound changes within and between businesses, leading to reduced service costs in faxes through Internet faxing and Internet calls especially international calls (Networkedintelligence, 1999). Further cost saving arising from low paper transactions, shorter order cycle and inventory management are other benefits compatible with small business using e-commerce (Gulledge & Sommer, 1998; Quayle, 2002:1152). The OECD (2000) report argues that the provision of infrastructure and support for e-commerce applications will result in an improved relations with partners and rationalisation of business process will be enhanced.

There has been too much optimism about the cost reduction of e-commerce, but the realisation of this expectation can be frustrating and sometimes not

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forthcoming (Vescovi, 2000:107). However, the reasons so far advanced are attractive for small businesses to consider e-commerce.

2.5.4 Job Creation

A key characteristic of SMMEs, as seen by government, is that they create new jobs. New business opportunities are likely to open up with the adoption of e-commerce in SMMEs (Stavrou, et. al 2000). This will strengthen the viability of SMMEs and provide developmental opportunities to the rural communities within which they operate. Therefore, facilitating the generation of income for rural communities through use of e-commerce for small business development is likely to create employment opportunities (GeSI, 2005). The use of ICT itself is likely to provide the user with a set of skills, which is in demand at the community and other levels (Carter & Grieco, 2000:1736).

The enabling of rural communities to participate in e-commerce can lead to entrepreneurial development. A study carried out by Poon and Swatman (1999:16) reveals that rural communities situated in tourism areas (Western Cape is a good example) can increase participation of community members in the business of tour organisation and guide through e-commerce. However, the potential of e-commerce activities and use by rural communities to generate new jobs will require new and advanced skills, which are likely to be absent amongst the communities (Networkedintelligence, 1999).

2.5.5 Intermediaries - 'Infomediaries'

The complexity of markets and conditions that rural small businesses operate has made them seek intermediaries to transact their business. This, in most cases, has been detrimental to the community because the intermediaries have capitalised on the challenges facing rural small businesses to exploit them (Grant, 1999). However, intermediaries continue to play an important role in both physical and online retail trade (Phan, et. al, 2005).

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The Internet offers outstanding opportunity for small businesses to market their products directly, eliminating the traditional intermediary (middleman) (Melewar & Smith, 2003:368). But, as a consequence of low ICT access and capacity, a new breed of electronic intermediaries, 'infomediaries', have emerged to represent the interests and service the needs of small enterprises within rural communities (Skuse, 2000). However, trust is strategic to gain the confidence of small businesses to participate in e-commerce through these infomediaries (Lockett & Brown, 2003).

However, a number of evidence abound which indicates that small businesses are likely to gain more exposure from these infomediaries through e-commerce than the traditional intermediaries (Hsieh & Lin, 98:113). PEOPlink is an example of an informediary that seeks to remove parties in between, by providing an e-commerce platform for artisans to directly access local and international markets (Grant, 1999).

If the opportunities offered by e-commerce are anything to go by, it means that rural communities have much to gain as a result of using e-commerce (Castleman & Coulthand, 2001:30). Therefore, rural communities must be encouraged to participate in e-commerce in order to enjoy the enormous benefits, such as mutual development of small businesses (Orbeta, 2005). However other factors are challenging the use of e-commerce by rural communities, subsequently mitigating developmental efforts.

2.6 Barriers to small business use of e-commerce

The majority of developing countries are faced with a number of challenges such as poverty, health, and other challenges. Additionally, ICT poses new challenges to these countries that attempt to derive benefits from the opportunities offered by e-commerce (Odedra-Struab, 2003:3). The threat is further worsened by the barriers faced by developing countries' rural communities in accessing and using ICT for development. Heeks (2000) mentions, that the barriers are located within the micro-level of the

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community/individual small business and the macro-level of national infrastructure and policy.

2.6.1 Lack or limited availability/access to information and communication technology infrastructure.

Access to ICTs and availability of telecommunications are basic prerequisites for e-commerce development and growth (Xanthidis & Nicholas, 2004:357). In developing countries the telecommunications infrastructure is barely available in rural communities, which is considered a barrier to the adoption of e-commerce (Standing et al., 2004:8; Orbeta, 2005). Where it is available, it remains a monopoly and a breeding ground for poor service and high cost (Mann, 2002). Though liberalisation of the telecommunications industry in developing countries is expected to drop prices and increase teledensity, this however, is not as envisaged (Rao, 2004:264). Rao further mentions that in most developing countries there is a low level of penetration of basic telephone service, especially in rural communities. Subsequently, lack of such a basic facility will impede the opportunities that e-commerce offers these communities (Cullen, 2003:249).

In South Africa the problem of the telecommunications industry is characterised by relatively high prices and the failure of the second national operator to start operations (Gilwald, Esselaar, Burton & Stavrou, 2005:131). This has resulted in the continuous monopoly of Telkom and a drop in fixed teledensity against the increase in mobile phones (Gilwald & Esselaar, 2005:21). This trend is reported in ITU (2005b) and ITU (2005c), indicators for global cellular subscribers and global main telephone lines, respectively. The number of phone lines in South Africa in 2000 was 4,961,700 with penetration of 11.6 lines per 100 inhabitants. This dropped to 4,821,000 with penetration of 10.40 lines per 100 inhabitants, showing a 2.9% drop over the period. Within, the same period mobile phone users increased by about 45%. The implication is that small businesses will further be subjected to lack of affordable access, which is counter to the promotion of e-commerce adoption.

Another impediment is bandwidth. Where fixed line is available, the tremendous lag time as a result of low bandwidth generally affects the usability of Internet for e-commerce purposes (El-Nawawy & Ismail, 1999). In recent times, broadband technologies such as ADSL[13] is been touted as a solution to providing high bandwidth capacity to businesses (Dixon, Thompson & McAllister, 2002:9). However, the service is not available in most rural communities and the cost of connectivity is prohibitive for small businesses to contemplate (Gilwald, Esselaar, Burton & Stavrou, 2005:133).

According to Intenetworldstats (2005) report, Africa has shown a 258.3% growth in use of the Internet from 2000 to 2005, but this barely represents only 1.8% of penetration and 1.7% of users in the world. Furthermore, an ITU strategy and policy unit newslog reporting on the world's Internet demography shows that Africa increased its share size from 1% in 2001 to 3% in 2004, as illustrated in figure 2.5. This cannot be considered as good news because the statistics further reveal the dire situation that faces Africa.
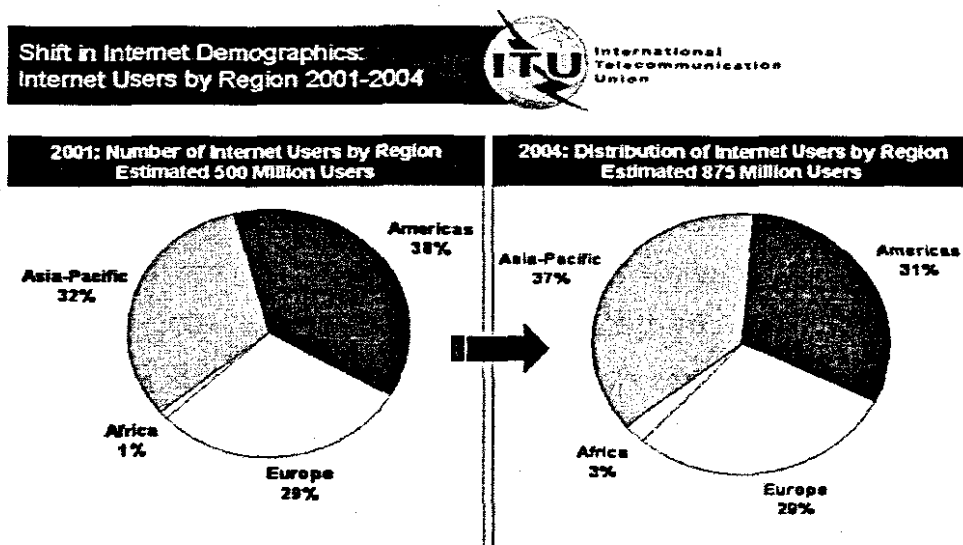
Figure 2.5: Shift in Internet demographics: Internet users by region 2001 – 2004 (**Source**: ITU, 2005a).

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[13] Asymmetric Digital Subscriber Line – uses existing copper wire, to transmit data and multimedia materials at 1.5 to 9mbps receiving speed and 16 to 640kbps sending speed.

Considering that South Africa has the substantial part of the percentages indicated, Table 2.1 shows South Africa's Internet penetration and usage. The penetration is significantly low when compared to developed countries. The situation can be attributed to the low fixed line penetration and the high cost of phone services in the country (Gillwald & Esselaar, 2005:23).

Year	Users	Population	% Penetration	Usage source
2000	2,400,000	43,690,000	5.5	ITU
2001	2,750,000	44,409,700	6.2	IWS
2002	3,100,000	45,129,400	6.8	ITU
2003	3,283,000	45,919,200	7.1	Wide World Worx
2004	3,523,000	47,556,900	7.4	Wide World Worx
2005	4,780,000	48,051,581	9.9	C+I+A

Table 2.1: South Africa – Internet usage and marketing report 2000 – 2005 (**Source**: http://www.Internetworldstats.com).

2.6.2 Lack of awareness, literacy and skills

There is a considerable lack of education and skills within Africa, a circumstance that is even worse in rural communities (Sylla, 2003:5). This is likely to pose a threat to virtually all aspects of development. Similarly, lack of awareness and basic ICT literacy is a barrier to e-commerce uptake by SMMEs (Darch & Lucas, 2002:149; Peters, 2003). Subsequently, engaging in the digital economy becomes impossible because of this barrier (Taylor & Murphy, 2004:284). It has even been argued that the problem of low education amongst developing countries is more threatening to e-commerce than the problem of connectivity (UNCTAD, 2002).

In most rural communities, lack of skilled ICT support staff is likely to be a problem to SMMEs. Rhodes (2003) in a study mentions that rural women in Africa are generally not educated and lack skill in ICT usage, which erodes the business potential of e-commerce. Another major concern is the fact that

most rural communities and small businesses are not aware of how e-commerce can impact on their business (IDC, 2005). This implies that awareness of the potentials of e-commerce to small business is necessary. The emergence and growth of e-commerce has placed new demands on developing countries for specific skills, which may not be readily available (Singh, 1999). However, e-commerce is considered as a possible platform to provide education and skills through distance learning, overcoming a significant percentage of these barriers (Cullen, 2001:314).

2.6.3 Language barrier

Different languages and vocabulary present another unique challenge to the use of e-commerce by small businesses, especially in the rural areas. This stems from the fact that even though economies are becoming global, they are far from being homogeneous (IDC, 2005). Adopting e-commerce under this circumstance requires specific kinds of language tools and localisation of content.

The deployment of technology should recognise the language peculiarity suitable to a particular entrepreneur, if it is to be successful, especially in rural communities. There are proven cases that access to the Internet in languages other than English language can be profitable for a small business. Examples can be cited from Chinese and Spanish small business websites (Mann, 2002).

However, understanding of simple web-based information published in English, for example, will be difficult or impossible to a non-English small business owner or customer to comprehend (Kamel & Hussein, 2002, Mann, 2002). This is further confirmed by a study conducted by Pigato (2001:6), which shows that to effectively use e-mail and Internet as against telephone, television, radio and print media not only literacy is required but also language skills. Table 2.2 illustrates the need for an entrepreneur or user to have technical, literacy and language competencies to use computer-based e-

commerce technologies as against others. This barrier is likely to affect non-English writing and speaking communities, which the SMMEs in rural communities of Western Cape are likely to be.

	No Literacy	Basic Literacy	High literacy/ Language skills	Computer Literacy	Technical competence
Oral Communication	*				
Radio	*				
Television	*				
Fixed line Telephone	*				
Mobile telephone	*				
Public phone	*				
Newspapers and Printed sources		*			
Fax machine		*			
E-mail			*	*	*
Internet			*	*	*

Table 2.2: Capability levels required for using contrasting technologies (**Source:** Pigato, 2001:7).

2.6.4 Lack of electronic financial environment

The use of electronic payment systems is considered the most convenient for managing e-commerce transactions (Kamel & Hussein, 2002:149). As the credit card is the most used payment instrument in the electronic domain, it creates a problem for rural small businesses (Singh, 2004:189). The aggravating circumstance of rural small businesses not having the funds to acquire a credit card infrastructure becomes problematic to the use of e-commerce (Southwood, 2005).

However, problems such as lack of security and appropriate technological solutions in the financial environment are major impediments (Mukti, 2000:3). There is the need to overcome these, and the challenge of deficient and limited available electronic transaction facilities before rural communities can fully participate in e-commerce (Odedra-Struab, 2003). This may pose a barrier since most rural communities are cash-based societies and lack access to the appropriate technology.

2.6.5 Affordability

The inability of people and small businesses in rural communities to rise above standard of living and acquire ICT services is a major barrier to e-commerce use for development (Pigato, 2001:10). Therefore, for e-commerce to be relevant in small businesses it must be affordable and accessible. The Internet and PCs are considered critical to e-commerce success. Internet access and PCs are still very expensive in developing countries. Though the cost of a PC has gone down drastically in recent times it remains beyond the reach of most enterprises and individuals within rural communities (Odedra-Straub, 2003). In communities where finances and infrastructure are issues, the possible affordable means of access to computers and Internet will be through a community access facility such as a telecentre (Marcelle, 2002:26).

In South Africa the situation is similar to most developing nations. The ITU (2005d) indicator on information technology shows that in 2004 there were only 3,740,000 PCs in South Africa, with a penetration of 8.27 PCs per 100 people. Though South Africa is amongst the highest penetration countries in Africa, the exceedingly low income of most members of rural communities does not provide for higher penetration (Gilwald, Esselaar, Burton & Stavrou, 2005:137). Stockdale and Standing (2004:307) caution that the adverse economic problems associated with rural communities could hinder potential entrepreneurs and small business to commit their meagre resources to e-commerce without an assurance of quick return on investment. However, the challenge is addressable through provision of financial incentives to rural community members who are planning or ready to integrate e-commerce into their business (Xanthidis & Nicholas, 2004:363).

It is important, therefore, if the above-mentioned challenges are tackled strategically as intended by the provincial government, considering that rural communities and small businesses will be developed and a state of e-

commerce readiness will emerge. Consequently, plans to have access to appropriate technology and using it are important to this research.

2.7 What appropriate e-commerce technologies can SMMEs use?

The emergence of e-commerce has created the possibility for innovative knowledge management strategy (Martin & Matlay, 2003:22). While large businesses take advantage of this strategy to improve their communication, product development and service offering, SMMEs in most rural communities are still struggling with the challenges of deploying appropriate technologies for business benefits. To overcome these challenges they may require some basic amenities such as roads, housing and communications network, for them to even have access to the traditional formal economy (Stavrou, *et. al* 2000). Badrinath (2001) argues that ICTs provide new ways of doing business, expanding business and improving knowledge competence and competitiveness. This agrees with the findings of Bridges.org (2002) that an entrepreneur with access to appropriate technology and who can effectively use it, is likely to accelerate efficiency in his/her business conduct and gain access to earlier unreachable markets.

Though the notion of appropriate technologies does not necessarily refer to sophistication and/or those compatible with application such as Global Positioning Systems (GPS), small business development can be done with simple applications such as e-mail, websites, digital photography (Gillies & Semine, 2003). Simple technology such as mobile phone has also proven to be a useful communication tools for SMMEs (Heeks, 1999). According to Egan, Clancy and O'Toole (2003:142), most businesses are more concerned about exchanging information with partners and customers, and will prefer to use basic technology at the early stages of e-commerce adoption. Further, Daniel and Wilson (2002:335) mention that the development of e-commerce capacity in SMMEs may require technical and managerial skills for effective use of the appropriate technology that has been adopted.

The e-commerce potentials of e-mail, mobile phones and web to small business as appropriate e-commerce technologies will be reviewed by way of illustration. However, instances exist where there is access to appropriate e-commerce technology, and know-how to use them, but increase in business activities is not visible (Komito, 2005:40).

2.7.1 E-mail

E-mail can be described as the exchange of messages between computers and other related devices. Heeks (1999) says in relation to small businesses in rural areas, that e-mail provides a number of potential benefits compared to traditional post, fax or phone:

- It is considered as one of the cheapest service of the Internet and much easier to use.

- It is a quicker and more reliable way for small businesses to exchange information (documents, photographs, drawings, etc.) with customers and suppliers remotely located and are likely connected to email. This can be illustrated by an example in box 2.0, how e-mail was used by a Cape Town boat maker to keep customers updated on the progress of work on their boats.

- The service is likely to be accessible to a small business operator while away from the office.

In Cape Town- Dean Catamarans a company building model boats used basic technology applications like e-mail, digital photographs, chat rooms and online specifications to have personalized customer relations, win new clients and maintain loyalty.

Box 2.0: Example of using e-mail to inform customers (Gilles & Semine, 2003).

Therefore, using e-mail can be a starting point for the use of e-commerce by SMMEs, which is likely to improve their communication and information sharing, and possibly bring the most benefit (Daniel & Wilson, 2002).

Communication is a vital component of any business. Using e-mail as a medium can help external communication in either B2B or B2C context and this may reduce transaction cost (OECD, 2004). Figure 2.6 illustrates a typical way a small business uses e-mail to communicate with its customers and suppliers (Poon & Swatman, 1999). E-mail becomes an appropriate technology to use for communication purposes. However, SMMEs in rural communities are likely not to have telephones or computers in their business premises to send and retrieve messages (Valentine, 2004) and the cost of acquiring the appropriate technology for e-mail can be prohibitive (Bocij *et al* 2003:142). Therefore, the use of public call offices (PCOs) equipped with computer terminals or community telecentres or "cyber cafes" that are connected to the Internet becomes a possible solution (Stavrou *et al*, 2000). The use of e-mail can be of particular benefit to any small business that is likely to import or export products as demonstrated in the example of the boat company in box 2.0. Other advantages of e-mail compatible with small business are in marketing. Botha, Bothma, Geldenhuys, Singh, der Merwe, Booysen and Fourie (2004:153) mention some of the advantages as follows:

- Small businesses can use e-mail as anytime medium of advertisement, due to the possible instant delivery of the message.
- Small businesses can keep in touch with customers on frequent basis.

These are but a few of the many benefits that are derivable from use of email by small business.
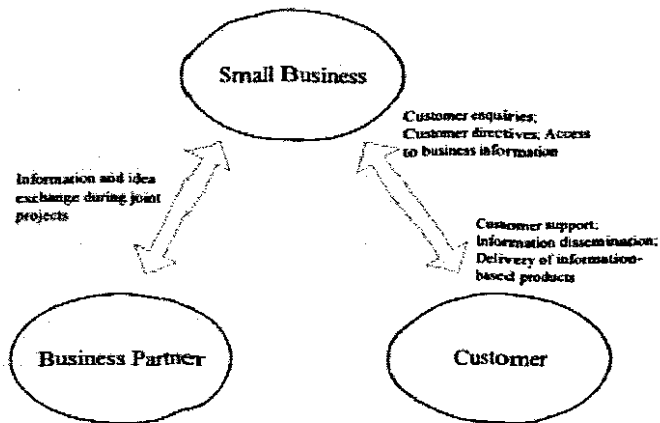
Figure 2.6: E-mail use between a small business, its business partner and clients (Source: Poon & Swatman, 1999:13).

2.7.2 Mobile phones

With the advent of mobile phones, and the significant growth and reach of mobile networks in Africa, and specifically South Africa, mobile phones are now considered very suitable for business users (Pigato, 2001:11). There are emerging facts that Africa today has the fastest annual growth rate of 65% compared to the world's 33% and Europe's 35% in mobile subscribers (Panos, 2004). South Africa has approximately 41% penetration (ITU, 2005b). Though this is significant it is not adequate.

The use of mobile phones for business activity is increasingly becoming an important component of e-commerce in developing countries (Orbeta, 2005). Business owners can respond to calls immediately, and reach staff or business associates while away from the business location. In such instances a mobile phone is an appropriate technology because it can be carried around as opposed to a PC (Sylla, 2002:7).

Heeks and Duncombe (2001) mention that digital mobile phones can offer additional benefits such as:

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- International coverage and use. Ability to send text messages.

- Access to the web and Internet e-mail (for WAP-enabled phones).

- Faster and improved communication

- Reduced travel costs

- Ability to place orders without having to return to the office.

From a survey of 140 small businesses in South Africa and 150 in Egypt carried out by Vodafone in 2004 under the 'socio-economic impact of mobiles' (SIM) in poor countries, it was found that benefits exist from the use of mobile phones by small businesses (see Figure 2.7).
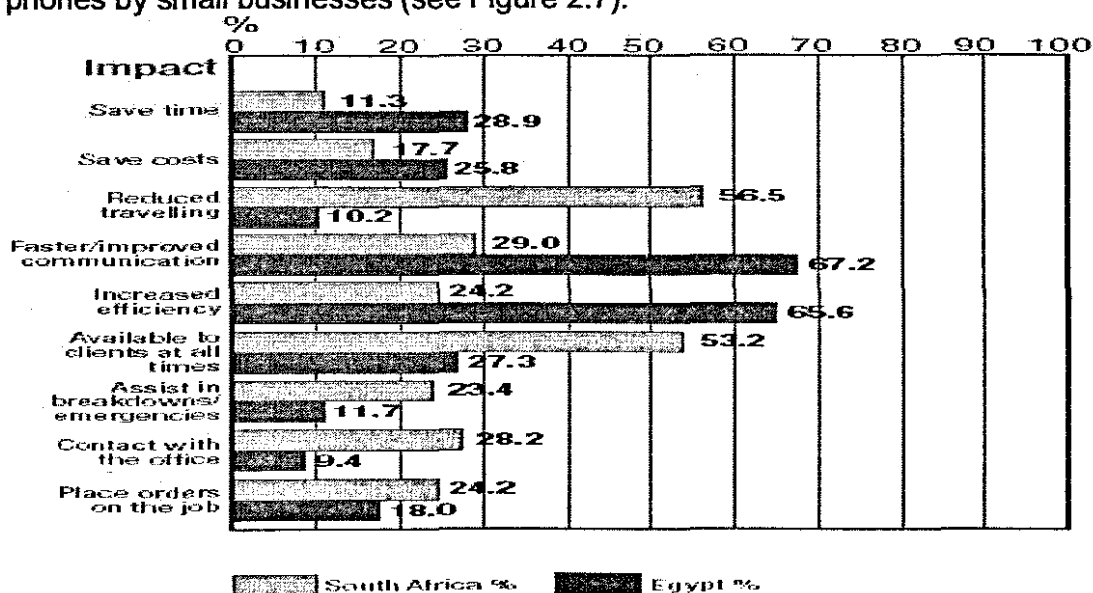
Figure 2.7: Benefits of mobile phones for small business – Responses of survey of local communities in South Africa and Egypt (Source: Vodafone, 2004).

A very important component of mobile phone technology is Short Message Service (SMS). This service is rapidly being used by businesses as a means for communication and advertising because of its low cost, high reach and other inherent characteristics (Botha, et al. 2004:164). Furthermore, using SMS, farmers in rural areas in Kenya obtain agricultural product and service information such as market prices (Nkonu, Asaba, Mukebe & Day, 2005). The difficulty in obtaining market information has been a consistent challenge for rural farmers to improve their income. Box 2.1 illustrates examples of how

mobile phones are used to coordinate fishermen's sales and activities in Philippines and Kenya. Mobile technologies with Internet capabilities like 3G phones and PDAs are likely to be more compatible with e-commerce.

Philippines

Filipino online delicacies store, Pinoydelikasi.com, coordinated incoming supply chains and outgoing distribution to customers using mobile phone. This mode of communication was used to place order with the fishermen in Bantayan Island where fixed wired communication is very limited or unreliable. It was also used to monitor delivery time and provide the fishermen with a regular income that is at least 3 times what they used to earn.

(Gillies & Semine, 2003)

Senegal

MANOBI initiated a project in 2003, which uses 'Innovative Internet and wireless e-services for the strengthening of Senegalese fisherman artisans'. The project uses WAP and SMS technology via mobile phones to provide up-to-date weather reports and market price information to the fishermen. The fishermen also use the interactive feature of the technology to input fish stock information for marketing purposes, and to log their departures and estimated times of return, so that people are at alert in case of delays in arrival of boats. Figure 2.8 shows how the technology is used, to input catch information. (MANOBI, 2005).

Box 2.1: Examples of mobile phones use for e-commerce in Philippines and Senegal.

Small business developmental effort in rural communities of the Western Cape where mobile communication signals may not be available or are unreliable; and high mobile phone tariffs (Heeks & Duncombe, 2001) can hamper the consideration of mobile phones as an appropriate e-commerce tool.

Figure 2.8: Inputting latest catch data to the MANOBI server (Source: MANOBI, 2005).

Interestingly, GeSI (2005) reports that mobile phone has enabled tradesmen to participate in the local economy in South Africa, by innovative advertisement (see Figure 2.9). This section of the community might not have been able to promote their skills and secure jobs if not for mobile phones. This further supports the claim that the mobile phone is an appropriate e-commerce technology suitable for use by rural communities for small businesses development.

Figure 2.9: Innovative advertisement by tradesmen – Johannesburg roadside **(Source:** GeSI, 2005).

2.7.3 Web

The World Wide Web (WWW) is one of the most pervasive services of the Internet, because of its extensive use as a commercial and affordable advertising media (Rao, 1997:229). The popularity of the web as an interface to most resources on the Internet has led to its tremendous growth (Cheung, 1998:172). This has created an opportunity even for rural communities to have access to potential global markets (Rao, Metts & Monge, 2003:11). However, small businesses are shut out from the benefits of the web, because only a few have and use computers and, in some instances, they completely lack access to the Internet (Hsieh & Lin, 1998:113).

Heeks and Duncombe (2001) mention that the growing impact of the web makes it suitable for rural small businesses with websites to:

- Advertise products and services to previously unreachable areas.
- Accept enquiries and orders from unexpected people/places.
- Accept payments using credit cards, when the ability for it is available.

In rural communities where access is available, the slow speed of the Internet can frustrate and lead to disenchantment amongst small businesses to use it as a marketing tool (UNCTAD, 2004). Notwithstanding, according to Hsieh and Lin (1998:114), the web as a marketing channel has proven to be more efficient than traditional channels, especially for small businesses. This means that a small business will barely need only a 'static' website to promote its capabilities and relate contact and product information (Moodley & Morris, 2004:166) rather than a transactional website. Through the support of "Infomediaries" craftsmen in several rural regions of developing countries have utilised the web to advertise and sell their products to global market (Grant, 1999).

It is argued that e-commerce involves far more than using basic forms of ICT technologies, like e-mail, static websites and mobile phones for business

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transactions (Teo & Pian, 2003:80). Fillis, Johansson and Wagner (2003:337) further argue that sending and receiving text-based email within the business context cannot be regarded as e-commerce. This, however, is debatable. The fact that these technologies are an initial part of e-commerce adoption (see Figure 2.10) makes them more appropriate for rural communities, considering the challenges they face.
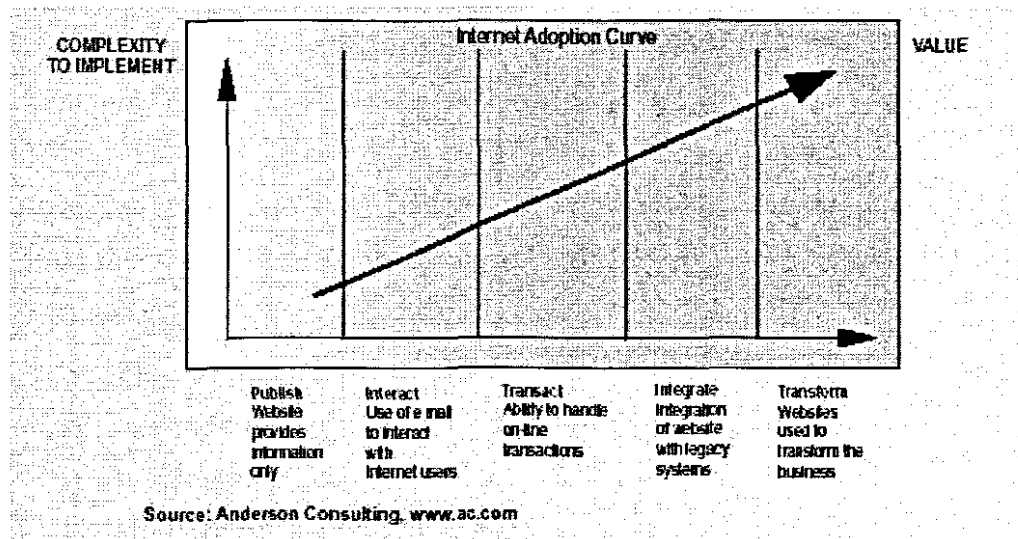
Figure 2.10: Stages of Internet adoption by government and business (**Source:** cited in NCC, 2000).

Therefore, the possibility of using appropriate e-commerce technologies by rural communities and small businesses will be determined by the right conditions and environment. To ascertain this, it is important to review the e-commerce readiness of the Western Cape as a critical condition for rural communities to participate in e-commerce.

2.8 E-commerce readiness of the Western Cape

A possible starting point to prepare rural communities and the small businesses within it to understand and use e-commerce is to raise their skills level and overall capacity to access and use the appropriate technologies (Pigato, 2001:6). Furthermore, Jutla, Bodorik & Dhaliwal (2002), mention that

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rural communities and small businesses have special needs and these needs have to be addressed alongside creating an e-commerce "friendly" environment.

Though the scope of this research does not extend to investigating the e-readiness of the Western Cape, a quick review of e-commerce readiness of will provide a background against which we can know to what extent policies and strategies discussed earlier have been implemented to enable rural communities and small businesses to embrace e-commerce.

An assessment report by Bridges.org (2002b:12) describes the following as good measures to consider in determining the e-commerce readiness of the Western Cape:

- the status of infrastructure
- accessibility of ICT to the population (previously-disadvantaged communities)
- Human capacity and training
- Policy environment

This research considered only the measures that relate to access to appropriate technology and the resultant effects it has within rural communities of the Western Cape. The objective is to determine whether the technologies available engender the participation of the communities in the digital economy for possible small business development.

Several researches have shown that most developing countries do not have all the necessary capabilities for e-commerce adoption, including South Africa (Odedra-Struab, 2003). This may stem from non-extensive use of e-commerce either for lack of knowledge of the potentials by small businesses or for obvious reasons of disadvantages, as in rural communities. However, South Africa, particularly the Western Cape, has shown some potential. The

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Smart Cape project evaluation conducted by Infonomics (2003) scored the project 73% in terms of physical access, affordability, local economics and political will. This, however, places only a section of the Western Cape in good stead.

A similar research conducted by the City of Cape Town and PGWC (Western Cape, 2003:56) shows that:

- There are approximately 1million fixed telephones lines in the Western Cape, which indicates a penetration of 1 line per 4.5 inhabitants. This is based on the 2001 census population figure of 4.5 million. However due to the access challenges earlier enumerated the penetration would have dwindled by now.

- Cellular phone penetration, regardless of the ownership and usage conditions, is around 1 mobile phone to 2.2 inhabitants, a figure that may have risen by now, considering the pervasiveness of mobile phones and services.

- The number of people with access to the Internet (web) was estimated to be 369,000. However, the number of South Africans with access to the Internet (web and other Internet services) as of 2005[14] was put at 4,780,000 with a penetration percentage of 9.9 based on a population of 48,051,581.

The situation in the Western Cape is not bad judging from the above statements. However, the Cel Cape Gateway access project can improve the situation further. More importantly, the benefits that could arise from utilising ICTs to alleviate poverty and develop small business within-previously disadvantaged communities are critical to this research and surmised in a conceptual model.

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[14] See Table 2.1

2.9 Development of research conceptual framework

This study is based on rural communities and the use of e-commerce. The literature review achieves two things: first, it provides details within each of the three areas of concern and, secondly, it provides evidence as to how they relate to one another. This is captured in a conceptual framework (see Figure 2.11), which gives a graphical description which shows how the qualitative component of the study (interviews with involved persons) was generally focused on the barriers, opportunities, benefits and outcomes of e-commerce; the quantitative component was more focused on questions of access and use, at the level of the individual actual or potential entrepreneur.

The UNDP[15] human development report (2005) indicates that 60% of Africa's population lives in rural communities. Therefore, supporting rural communities with e-commerce infrastructure will enable them enjoy e-commerce opportunity. From this literature review, there have been claims that ICTs are capable of providing the launching pad to leap-frog rural communities into the e-commerce era. This will help to provide benefits such as small business development, creating economic opportunities, market expansion, job creation and empowerment, amongst others. However, existing social inequalities and artificial barriers such as lack of access to telecommunications, lack of skills, language and limited finances amongst others deprives the majority of African rural communities the benefits and opportunities associated with e-commerce.

Fillis, *et al* (2003:336) and other proponents of *Information Society* stress that making ICT available and affordable can provide rural communities with access to information, which is critical for their development. With access to and use of appropriate ICTs, rural communities are capable of realising the benefits of e-commerce. It is argued in this research that the use of

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[15] United Nations Development Programme

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appropriate e-commerce by rural communities will bring social and economic development.
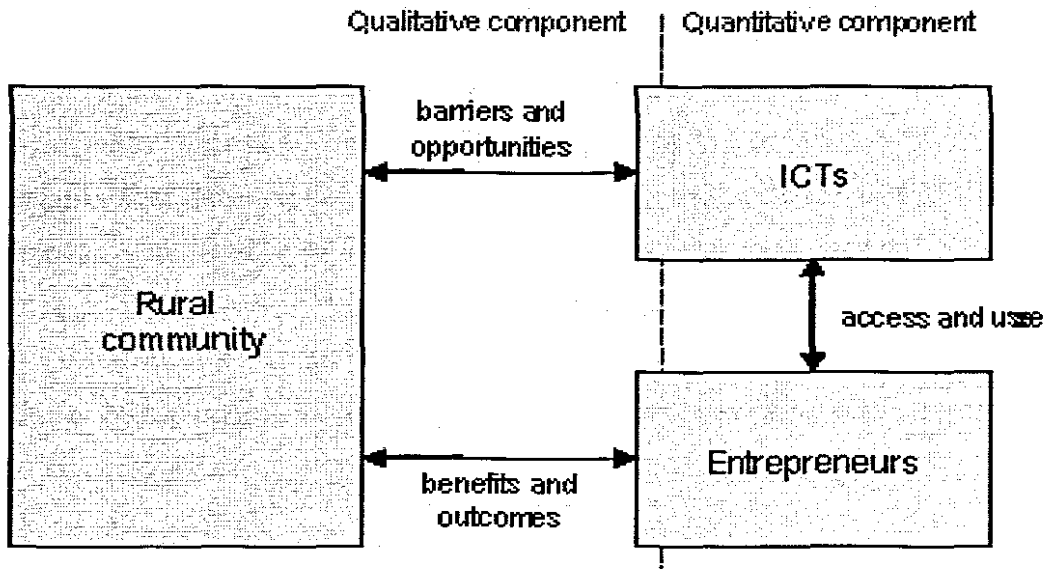
Figure 2.11: Research conceptual framework.

2.10 Summary

The literature reviewed described rural community and how e-commerce is utilised as a tool for small business development. The review focused on the characteristics of rural communities, such as barriers and opportunities that the use of e-commerce offers and how they interplay to create an enabling environment for economic and small business development within it. Furthermore, the literature shows that the unique nature of rural communities requires the provision of appropriate ICTs, which is critical to the use of e-commerce. The outcome of the review culminated in a conceptual framework that summarises the roles of each element discussed. The next chapter will describe the methodology use to investigate the six communities, against the backdrop of the literature and the conceptual framework.

Chapter Three

Research Methodology

3. Introduction

This chapter describes the methodology used for the study and the systematic approach used to obtain responses to research questions. The chapter first differentiates between design and methodology and proceeds to explain qualitative and quantitative methods and outline their differences. It also describes the relevance of the methods used. Qualitative and quantitative methods were used to provide a rich understanding of the issue under investigation for more reliable research results to be obtained from bringing together different methods in a single study.

The *qualitative* component of the research used the interview technique to investigate evidence of e-commerce effects on rural and previously disadvantaged communities, particularly in relation to the use of ICTs in developing and sustaining small business within these communities. The interviews were conducted within the six pilot communities of the Cape Gateway access project. The interviews were unstructured in nature with guides prepared as compass to gain insights to some of the issues drawn from the literature. In addition, the unstructured method of questioning allowed for the emergence of unique and unanticipated comments from interviewees. The interviews were transcribed and analysed for recurring themes.

The *quantitative* component was conducted using the survey questionnaire technique to determine the number of people using the project facilities and the frequency of usage. This allows for reaching as many of the community members as possible, principally those who could not be reached for interview during the short visits. The questionnaire uses semi-structured questions. This is appropriate because apart from getting fixed responses, the

researcher is interested in the opinions of the respondents who are not necessarily small business owners. The survey data obtained was analysed using Statistical Packages for Social Sciences (SPSS).

3.1 Research design and methodology

The concepts of 'research design' and 'research methodologies' are described differently and used interchangeably by researchers (Mouton, 2001:56). Mouton further gives clarity on the two concepts. His view is given here, as follows:

Research design	Research methodology
Focuses on the end product: what kind of study is being planned and what kind of result is aimed at?	Focuses on the research process and the kinds of tools and procedures to be used.
Point of departure = research problem or questions.	Point of departure = specific tasks (data collection or sampling) at hand.
Focuses on the logic of the research: what kind of evidence is required to address the research question adequately?	Focuses on the individual (not linear) steps in the research process and the most suitable procedures to be employed.

Table 3.0: Differences between research design and research methodology (**Source**: Mouton, 2001:56).

The differences between research design and research methodology outlined above show that when a research problem has been clearly formulated and understood the next step in research will be the research design, followed by the research methodology. The problem has been established as *"lack of access appropriate to ICTs that can support rural communities' use of e-commerce for small business development"*, and so it only remains to address design and methods.

3.1.1 Research design

The description provided in table 3.0 on research design clearly identifies it as an important first step in research. This is reinforced by Miller and Brewer

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(2003:262) who describe research design as "a model used by a researcher to discharge the burden of proof – the logical organisation that allows the researcher to feel that whatever s/he has done in their research allows them to reach valid conclusions". According to, Cooper and Schlindler (2003:146) research design is a logical organisation which constitutes the collection measurement, and analysis of data to obtain answers to research questions. They further mention that the design should be:

- an activity – and time based plan,
- always based on the research question,
- guide the selection of sources and types of information,
- a framework for specifying the relationships among the study's variables, and
- an outline of procedures for every research activity.

Considering the descriptions above, this study uses a two-pronged design approach to investigate the six communities that constitute the pilot sites for the Cape Gateway access project. The first step was to make initial visits. Two of the study sites (Van Ryhnsdorp and Oudtshoorn) were selected, and visited to discuss and interact with members of the e-community forums to gain insight into the dynamics in these communities. These early visits also provided relevant information needed for the design of a survey questionnaire. The second step was borne out of the outcome of the initial visits. The survey questionnaires were designed to so that a larger population within the communities can be reached.

Another aspect of the research design involved combining qualitative and quantitative methodologies. Mingers (2001:247) refers to this as multi-method approach. It provides an exhaustive way to address the research questions.

The figure 3.0 describes the logical flow of the research design; starting first with the research background which provided the direction for which relevant

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literature was sought and discussed. This culminated in the formulation of a conceptual framework summarising the literature, and describing the relationship between the major components of the research
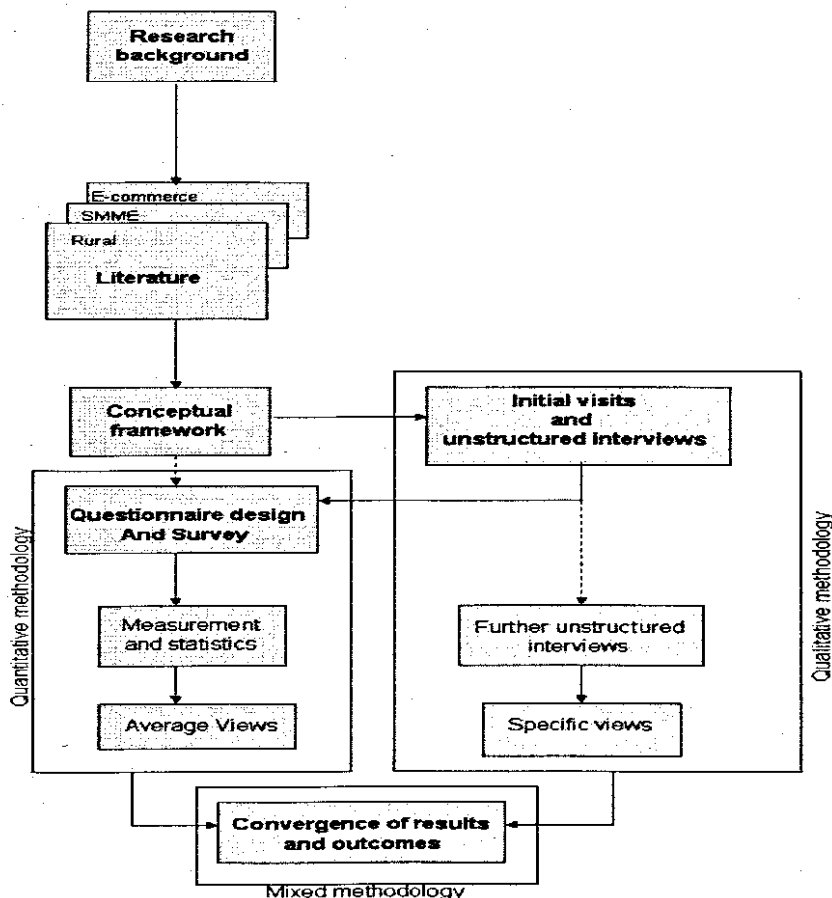
Figure 3.0: Research design flow

Initial visits made and interviews conducted during the visits provided the basis for a questionnaire. The subsequent interviews (qualitative methodology) and the questionnaires (quantitative methodology) were executed simultaneously and the convergence of the two data collection methods showed how multi-method is use in a single research. This research design provides the foundation for the kinds of tools and procedures that are used to achieve the objectives of this research. These are reviewed in research methodology below.

3.1.2 Research methodology

Research method concerns the way ideas and evidence are organised and disseminated (Miller & Brewer, 2003:192). They further mention that this is important since it establishes legitimacy for a research conducted. However, there are different approaches to conducting a research. Lee (1991:342) states that research can be approached from either an interpretive or positivist perspective. The interpretive perspective consists of ethnography, hermeneutics, phenomenology, and case studies; the positivist perspective consists of inferential statistics, hypothesis testing, mathematical analysis, experimental and quasi-experimental design. But, choosing method(s) or appropriate tool to accomplish research objectives has to be based on practical considerations (Robey, 1996:402; Silverman, 1998:7).

For a study that deals with a social context such as this one, doing real, controlled experiments is not feasible; neither can we wait for natural experiments to occur (Miller & Brewer, 2003). Moreover, there are difficulties such as quantifying, formal propositions and experimental controls associated with research that tries to portray social reality (Mingers, 2001:242). Therefore, an alternative to experiments is the use of qualitative and/or quantitative methods. The sections that follow review expert views on these two approaches.

3.1.2.1 Qualitative research methodology

Casebeer & Verhoef (1997) describe qualitative research as "the non-numerical examination and interpretation of observations, for the purpose of discovering underlying meanings and patterns of relationships." Myers (1997:241), like others; say this research methodology involves the use of approaches such as:

- participant observation,
- archival source analysis,
- interviews

- focus groups, and

- content analysis.

Any of these approaches can either be used singly or in combination. Whichever is chosen, in most situations, the motivation that comes with adopting qualitative approach in a research is the possibility to acquire data from human subjects through discussion (Myers, 1997:241; Struwig & Stead 2001:12).

This study uses the interview approach to capture the understanding and perceptions of the e-community forum members and entrepreneurs on the contribution of the Cape Gateway project to their respective communities. This is informed by the fact that using the qualitative method, a researcher can discover underlying issues, the more so because the method is suitable for probing philosophical ideas concerning human nature and society (Miller and Brewer, 2003:238). As an example, the words 'Internet banking' came up in the course of one interview, which the researcher would have thought as a complex e-commerce activity inappropriate to the needs of the communities. If not for this, it would not have been added as an option in the questionnaire. Furthermore, the interviews being unstructured allowed for the discovery of this additional issue that would not have been captured.

The research dealt with people in communities and their interaction with technology to bring benefit and development. As Struwig and Stead (2001:11) stress, the use of a qualitative method allows for an in-depth investigation of a given phenomena, such as the dynamic interaction of the community members with their context (the Cape Gateway access project).

3.1.2.2 Characteristics of qualitative research

Qualitative research has several characteristics. However, the perspective and the path a researcher takes in qualitative research is dependent on the overall effect that such an approach will bring to bear on the outcome of the

research. Ratcliff (2005) summarises the characteristics of qualitative research and categorises them into strengths and weaknesses, which are illustrated in Table 3.1.

Strengths	Weaknesses
Depth and detail – may not get as much depth in a standardised questionnaires	Fewer people studied usually and less easily generalised as a result.
Openness – can generate new theories and recognise phenomena ignored by most or all researchers and literature	Difficult to aggregate data and make systematic comparisons
Helps people see the world view of those studies – their categories, rather than imposing categories, simulates their experience of the world	Dependant upon researcher's personal attributes and skills
Attempts to avoid pre-judgements (although some recent qualitative researchers disagree here – judgements are always made, but it is nor usually admitted – example the choice of one location over the another is a judgement) – however the goal is to try to capture what is happening without being judgemental; present people on their own terms, try to represent them from their perspective so reader can see their views, always imperfectly achieved – it is quest.	Participation in setting can always change the social situation (although not participating can always change the social situation also).

Table 3.1: Characteristics of qualitative research (Source: Ratcliff, 2005).

3.1.2.3 Quantitative research methodology

Cooper and Schlindler (2003:165) define quantitative research as "the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect." In quantitative research the numerical measurement of specific aspects of phenomena is important and has to be exact (Miller & Brewer, 2003:193). Further, generalisation is a vital goal of this approach. This is important when

a researcher is interested in establishing facts that can be generalised across the population (Kaplan & Duchon, 1988:576). This will enable us to generalise any characteristic discovered in a particular location, across other similar communities within the Western Cape, the more so because similarities and challenges amongst the six communities in this study are common.

Struab, Gefen and Boudreau (2004) re-emphasize that methods and techniques in quantitative research use numbers (quantity) to represent values, which is viewed as a strong way of describing phenomenon. Therefore, the measurement of users' frequency of visits to the project facilities at the different locations, for example portrays, this nature of the quantitative approach. This research approach was used to draw parallels on level of the acceptance of the project within the different communities.

3.1.2.4 Characteristics of quantitative method

This research methodology is usually characterised by the examination of effects of one or more variables on another (Kaplan & Duchon, 1988:573). This characterisation is informed by the knowledge that the world has an objective reality that can be captured and translated in the form of statistical or other analyses (Struab, *et al.*, 2004). Further, quantitative methods use a set of ad hoc procedures to define, count and analyse its variables (Silverman, 1998:4). However, Silverman criticises this, saying that quantitative research usually does not consider the social and cultural characteristics of the variables under study.

Quantitative methods have been dominant in the information systems research domain. However, other methodologies such as qualitative methods are fast making inroads (Dubé & Paré, 2003:605). This is the case especially now that there is a shift away from technological to managerial and organisational issues in information systems research (Myers, 1997:241). In an earlier paper, Halfpenny (1979:799), cited in Silverman (1998:6), mentions that the features of quantitative method such as hard, fixed, objective, value-

free, survey, hypothesis testing, and abstract are strong shortcomings, which should inform researchers to consider other research methods.

3.1.2.5 Distinctions and similarities of qualitative and quantitative methods

According to Kiely and Fitzgerald (2005:2) though research methods may differ in certain aspects, they are similar because the underlying basic principles behind them are structured and scientific. Similarly, Casebeer and Verhoef (1997) indicate that the distinctions (see Table 3.2) between qualitative and quantitative methods provide insight into understanding the two methods and the likelihood of using them together in a single research. As Silverman (2005:6) asserts, neither of the two research methods is better than the other.

Concepts	Quantitative method	Qualitative method
Type of reasoning	• Deduction • objectivity • causation	• induction • subjectivity • meaning
Type of question	• outcome oriented • pre-specified	• process oriented • open-ended
Type of analysis	• numerical estimation • statistical inference	• narrative description • constant comparison

Table 3.2: Distinctions between quantitative and qualitative methods (**Source:** Casebeer & Verhoef, 1997).

Although proponents of the different research methods and paradigms continue to insist on keeping their approaches pure in information systems, according to Kaplan and Duchon (1988:574) the need to interpret information technology in social context as well as quantifying outcomes makes it necessary to consider a multi-method approach in information systems research such as this one.

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3.1.2.6 Multi-method approach

To achieve the objectives of this study, this idea to combine qualitative and quantitative approaches are combined. Mingers (2001:241) considers that the approach of combining different research methods in a single study provides a rich understanding of a research topic which could lead to more reliable research results. The strength therein lies in the diversity of the methods, specifically in bringing together the complexities of how the real-world is viewed by the different methods (Robey, 1996:403). Using a single method, a researcher is likely to gain a limited view of a particular research situation (Mingers, 2001:244). For example, attending to only the number of users of the Cape Gateway project facilities and the frequency of usage as a measure (quantify) to the acceptability and penetration of the project amongst the community, or only seeking to know the subjective views of the community members or project managers about the project would not suffice.

In seeking substantial in-depth information, a qualitative means of acquiring data is necessary (Egan, Clancy & O'Toole, 2003:144). The need for quantifiable data in this research is important, as it can provide 'hard facts' in a numerate form (Miller & Brewer, 2003), which most governments and policy makers require to gauge the success of projects (Xandithis & Nicholas, 2004:359).

3.1.2.7 Multi-method drawbacks

The multi-method adopted in this research is not without its drawbacks. Landry and Banville (1992:88) agree that combining methods is good, but caution that a mixed approach is relatively new in the area of information systems study. Therefore, there is a need to approach multi-method with the same disciplined methodological rules as the 'traditional approaches'- qualitative and quantitative. The caution by Landry and Banville becomes more pertinent because as Lee (1991:363) posits there are stiff oppositions from the proponents of the different approaches on the basis that the

approaches are opposed and incompatible with each other. For example, Kaplan and Duchon (1988:575) argue against combining qualitative and quantitative methods because, in their view, the rationale is not easily justifiable as to why multi-method approach is used. Regardless of the shortcomings, Lee (1991:363) still supports combining the two approaches on the grounds that they are mutually supportive.

3.2 Research location

This research was undertaken in six different communities in different parts of the Western Cape (see Table 3.3). The communities had been previously selected by the Provincial Government as pilot 'e-centres' to promote the use of ICTs as tools for creating opportunities and economic empowerment. This period of ICT-related activity in the communities provides a unique opportunity to study how the communities are using e-commerce technologies, especially for small business development.

Location	Facility	Nature
Bitterfontein	Bitterfontein Library	Deep rural
Struuisbaai	Struuisbaai Library	Peri-urban
Oudtshoorn	Bongulethu Library	Urban
Van Rhynsdorp	Bambanani Multi Purpose Centre	Peri- urban
Elim	Elim Primary School	Deep rural
George	Cornville Primary School	Urban

Table 3.3: Research locations

The communities described above are not all rural, but they are similarly under developed. As a result, this research refers to all of them as 'rural'.

3.3 Data collection techniques
Data collection involves setting the limits of the study, collecting data through means such as interviews and questionnaires and establishing the procedure

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for recording the data (Creswell, 1994:148). This is important in increasing the reliability of a study (Yin, 2003:57) and affects the ways in which data are to be collected.

The qualitative method is closely associated with the following data collection techniques: interview, participant observation, and vignettes (Miller and Brewer 2003:239). The collection of qualitative data for this research was undertaken through *interviews*. The quantitative method is associated with the following data collection techniques: survey, analytical survey and experimental (Struwig & Stead, 2001:42). The collection of quantitative data for this research was undertaken using *survey questionnaires*. The justification for these choices is made in the paragraphs that follow.

3.3.1 Interview technique

This qualitative technique of data collection is regarded as a guided conversation (Yin, 2003:89). It is suggested that the technique can be used for improved response rate and the explanation of a study more convincingly than other techniques (Oppenheim, 1992:81). More importantly, with interview a researcher is able to discover unique and unanticipated issues during interaction with subjects (Gerson & Horowitz, 2002:210).

Typically, interviews involve a face-to-face meeting with the interviewees. According to Struwig and Stead (2001:98) said this is achievable through the following formats:

- Structured interview: this involves using structured questions and discussion is constrained between the interviewer and the participant with little room for elaborate responses.
- Semi-structured interview: this combines structured and unstructured formats of questioning and multiple responses can be obtained for a set of questions, which allows for more detailed responses.

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- Unstructured interview: this is conducted without any comprehensive list of predetermined open-ended questions. It provides in-depth data on the topic being investigated and allows participants to be interviewed on a number of separate occasions.

In this research unstructured interviewing was used. However, interviews are said to be time-consuming, costly and could be difficult to analyse (Oppenheim, 1992:83) and, most especially, they are perceived to be biased at most times (Miller & Brewer, 2003:170).

3.3.1.1 Interview content

The interview questions created for this study were such that they targeted three different categories of interviewees: Cel Project Manager, e-community forum members and community members operating as small business owners. According to Welman and Kruger (2001:188), using this technique, a researcher simply suggests the theme of discussion and poses questions as they emerge from the interaction. They further mentioned that the technique can facilitate in-depth probing of interviewees. In this study an interview guide is used, but it is not a structured script for each of the interviews. However, the guide contains a set of general issues to be addressed by the interviewees within the context of the project. Initially, the interview guide is developed based on the issues raised in the literature to suggest potential questions; however, later interviews included some emergent issues that were mentioned by previous interviewees.

A common set of issues were addressed in each interview, regardless of the interviewee. Typically, interviewees were asked about the usefulness of the facility to the community. Further, they were asked how, in their capacity as manager or user, they had been able to engage and inform the community about the project facilities. An example of a common question asked was the challenges they faced or are facing with the project. The bulk of the interviewees had a keen interest in how community members could use the

project facilities to accelerate economic development and the general potential impact of ICT, as will be seen in the discussion of the results.

Apart from the common issues in the questions, interviewees were asked some questions that were specific to their roles as project managers, e-community forum members (community managers), or small business owners. The project manager at Cel was asked about the objective of government in setting up the pilot centres, factors that informed the choice of the six pilot communities, the challenges he is facing in managing of the projects, whether the objectives of the project have been realised, and how the community has reacted – in terms of acceptability and usage of the facilities.

E-community forum members (chairperson and training coordinator), who are directly involved in managing the projects in the community were asked how they have been able to mobilise the community to use the facility, what the community members use the facilities for, and whether there are instances of community members (entrepreneurs) using the facilities to engage in online business transactions or other types of electronic engagement. Small business owners and entrepreneurs who were found in the communities were asked to comment on how the facility had helped them in their business, what the implication would be for their business not having access to the centre, and whether the use of the facility (or other electronic tools) had had any strategic impact on the development of their business.

A number of interesting themes emerged from the interview process that were not contemplated during the design of the interview, and were included in the interview guides (see Appendix A). Prominently (as will be seen in the discussion of the results), community members were commonly found to be engaged in online banking. Subsequently, questions were, added to probe

how the communities were using online banking and other electronic tools in their commercial activities.

3.3.1.2 Interview process

The method used for the interview was face-to-face meetings at the different locations and offices of the interviewees. The interviews lasted from 10 to 60 minutes and were recorded with a digital voice recorder. This captured an accurate rendition of the interview session (Yin, 2003:92) suitable for transcription. In some instances, very relevant and key issues were also jotted down, helping to generate *ad hoc* questions during the interview sessions.

With the exception of two sites (Van Rhynsdorp and Oudtshoorn) the order in which the interviewer approached the interviews was to first to introduce himself and give as much details of the purpose of the research. Once the interviewees were clear about the purpose of the interview and had agreed to be interviewed, the researcher asked whether the interview session could be recorded, to which all the interviewees accede. With the preliminaries out of the way, the digital recorder was turned on and the interview commenced. In some instances, the first question, asking what the project was all about, sparked off a lengthy discussion session. Where the interviewee was not so forthcoming, the researcher tried further probing. To the extent possible, the interview was done in a relaxed and exclusive environment. However, some interviewees are extremely busy people and were interrupted during the sessions. Some interviewees had difficulties in clearly expressing themselves in English because their first language is Afrikaans. Subsequently, the wording of the questions and the manner of questioning was simplified so as to ease the language problem.

3.3.1.3 Profile of the selected Interviewees

At the end of the interview process, the project manager at Cel, eleven (11) e-community forum members, and four (4) small business owners from the six

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different communities had been interviewed. Table 3.4 (below) presents the profile of these interviewees. For ethical reasons names, are not mentioned. However, the different categories of Interviewees are identified by codes. The codes assigned were: PM, ECM1, ECM2, EN1, and EN2; where *PM* stands for Project Manager, *ECM1* stands for e-community forum member one, *ECM2* stands for e-community forum member two, *EN1* stands for business owner one, and *EN2* stands for business owner two.

Location	Code	Interviewee Type	Type of business	Using ICT for business
Cape Town	PM	Project Manger	N/A	N/A
Bitterfontein	ECM1	E-community forum member	Community project manager	N/A
	ECM2	E-community forum member	Community project manager	N/A
Elim	ECM1	E-community forum member	Community project manager	N/A
	ECM2	E-community forum member	Community project manager	N/A
George	ECM1	E-community forum member	Community project manager	N/A
Oudtshoorn	ECM1	E-community forum member	Community project manager	N/A
	ECM2	E-community forum member	Community project manager	N/A
	EN1	Business owner	ICT related	YES
	EN2	Business owner	Tourism	YES

Struusbaai	ECM1	E-community forum member	Community project manager	N/A
	ECM2	E-community forum member	Community project manager	N/A
	EN1	Business owner	ICT related	YES
Vanrhynsdorp	ECM1 .	E-community forum member	Community project manager	N/A
	ECM2	E-community forum member	Community project manager	
	EN1	Business owner	Real estate agent	YES

Table 3.4: Profile of interviewees

3.3.2 Survey technique

Neuman (2003) describes the survey method as suitable for measuring respondents' self-reported belief or behaviours. He further says that the survey method provides a quick and efficient way of reaching a larger portion of the population and gathering data at relatively low costs compared with other collection methods. This approach was found to be an effective way to obtain data from those that could not be reached (Creswell, 1994:118) through interviews. More importantly, as Newsted, Huff and Munro (1998:553) mention, the survey method is amongst the popular methods used by researchers in information systems, for the following reasons:

- Surveys are easy to administer and simple to score and code.
- They allow researchers to determine the values and relations of variables and constructs.
- They provide responses that can be generalised to other members of the population studied and often other similar populations.

- They can be re-used easily and provide an objective way of comparing responses over different groups, times and places.
- They can be used to predict behaviour.
- They permit theoretical propositions to be tested in an objective fashion, and
- They help confirm and quantify the findings of qualitative research.

Surveys, however do not allow for face-to-face interaction with the respondent as with the case of interview. Oppenheim (1992:16) msntions some shortcomings with survey questionnaires:

- They limit the range of responses that can be extracted from the respondents.
- They are subject to unanswered questions by respondents, sometimes rendering the questionnaire invalid.

3.3.2.1 Survey instrument

The survey instrument for this study was a questionnaire developed after initial visits to two sites. It was necessary to know the situation at the sites before the questionnaire could be designed with confidence. The outcome of the preliminary visits informed the design of the questionnaire to enable the collection of data such as the number of users, frequency of use of facilities, usage patterns and profiles of the users. These could not be obtained during the interview process.

It was necessary to reach as many of the involved members of the communities as possible and the questionnaire was important for that reason. To gain the confidence of the respondents, and for ethical reasons, a confidentiality statement was put on the first page of the questionnaire. It clearly explained that responses would be used only for the purposes of this research and that the identities of respondents would not be disclosed. This was important to ensure that respondents fill the questionnaires honestly and dispassionately.

3.3.2.2 Survey instrument development

The survey instrument (questionnaire) was adopted with modifications from a previous study by Duncombe and Heeks (2001), who developed an instrument to measure the use of ICTs amongst small businesses in Botswana. Items from the instrument were chosen that best matched the use of e-commerce by rural communities of the Western Cape to develop small business.

Cooper and Schindler (2003:431); Wong, Hsu and Steele (2005:11) state that pilot testing a questionnaire is important so that inherent problems and extraneous questions in the design as well as factors that may impact the results will be removed as much as possible. Subsequently, a pilot test was conducted at one site, where ten (10) questionnaires were administered, after the initial visits. Feedback from the pilot study was subjected to a peer review and a refined version of the instrument was produced which was later administered at the five of the project sites.

The resulting instrument (see Appendix B) used in this research consists of three sections. Section one concern the demographics of the respondents. Section two targets potential entrepreneurs, this was to ascertain the possible number of small business owners using the facilities of the Cape Gateway access project, the usage mode, rate of use and general views (happiness or displeasure) of entrepreneurs about the project. Finally, the third section deals with the non-business users' pattern of use, rate of use and views about the project.

The questions in the questionnaire are semi-structured, combining the elements of closed-ended and open-ended questioning (Neuman, 2000:260). The larger part of the questionnaire comprises questions that give the respondent a selection of responses to choose from. This is important, because with the pilot test it was discovered that worded questions were

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difficult to answer as a result of language and literacy barriers. Further, it allows for collection of objective perceptions of respondents and also helps simplify the complexity in collecting subjective data (Wong, Hsu & Steele, 2005:12).

To capture the feelings of the users regarding the benefits, barriers/constraints and suggestions about the project, three (3) open-ended questions were asked at the end of sections two and three of the questionnaires. According to Struwig and Stead (2001:53) this is useful when further clarifications are required. However, these types of questions influence the respondent less than multiple-choice and it allow for a considerable degree of bias.

3.3.2.3 Questionnaire administration

A pilot test was administered on the spot in Vanrhynsdorp by the researcher. The actual questionnaires were hand delivered by the researcher to the five communities. Subsequent administrations of the questionnaires were done with the assistance of the facility managers at the different locations. This meant that the researcher had a session with the managers to explain the procedure for filling the questionnaires. The managers were very helpful in assisting some members of the community with filling the questionnaires. This was necessary because of language and literacy constraints, even after the revision done based on the pilot test.

These constraints might have affected the response rates for the questionnaire, the more so because it was not possible to translate the questionnaire into Afrikaans, the predominant language in some of the sites, owing to time constraints.

A total of one hundred and fifty (150) questionnaires were administered, representing 30 questionnaires per site for 5 project sites.

3.3.3 Sampling techniques

In any research it is impossible to reach the whole population of the study (Cooper & Schlindler, 2003:179). Howvere, through an appropriate sampling technique a researcher can draw a representative sample or a small collection of elements or cases from the larger population (Neuman, 2000:195). The sampling technique use in drawing sample could either be probability or non-probability (Miller & Brewer, 2003:269). This research used non-probability techniques. To draw the sample for the interviews (being a qualitative approach) a non-probability technique *snowballing* was adopted. For the *survey sample (being a quantitative approach) another non-probability* technique, *purposive sampling*, was adopted. Neuman (2000:196) stresses that quantitative sampling technique allow for findings from a sample to be generalised across the entire population and qualitative sampling technique focuses on a sample to acquire clarity and understanding of social life in specific context; as the case in this research where the context is the Cape Gateway access project in six (6) rural and previously disadvantaged communities.

3.3.3.1 Snowball sampling

This technique of sampling, as defined by Vogt (1999) cited in Miller and Brewer (2003:275), refers to "a technique of finding research subjects, where one subject introduces the researcher to other subjects". Welman and Kruger (2001:63) agree that the technique is suitable for using initially identified respondents as interviewees to identify other respondents.

In this study the researcher solicited the support of the Project Manager at Cel for initial introduction to the communities. For two of the sites (Vanrhynsdorp and Oudtshoorn), introduction was made during the monthly engagement of the project manager and the e-community forums. Subsequently, the researcher used the meeting to identify two members (chairperson and training manager/coordinator) for the initial interviews. During the course of these interviews the next group of interviewees was

identified. The researcher purposely asked for unique cases of users who exemplify the potential of ICT to develop small business, through the use of the Cape Gateway access project facilities.

In the view of Miller and Brewer (2003:275) snowball sampling is a frequent feature of qualitative research, especially for interviews. The use of this sampling technique helped the researcher to reach, identify and engage with community members who could have been difficult to contact. This as mentioned by Cooper and Schindler (2003:203), is a strong feature of snowballing technique.

For visits to other locations (Bitterfontein, Elim, George and Struisbaai) the same process of identifying the chairperson and/or training coordinator was adopted. Subsequently, through interviews with them other subjects (entrepreneurs) were identified and introduced to the researcher. In most instances, meetings with the identified entrepreneur were arranged by the e-community forum members.

3.3.3.2 Purposive sampling

The larger population to draw the survey sample was supposed to be the entire population of the communities that the project site serves. However, the target population for this research are the users of the project facility and other related ICT technologies. Therefore the larger population for the study was limited to the users of the facilities at the various communities.

Purposive sampling used for surveys requires that sample members must conform to certain criterion (Cooper & Schindler, 2003:201). In the case of this research, the sample members were the users of the Cape Gateway access facilities at the five locations. The survey questionnaires were handed to only community members who visited the centre to use the facility, regularly or occasionally.

The sampling frame for the research was based on the users at the centres, but in one particular location Struisbaai, the case of visiting users (tourists) emerged. However, this did not affect the sample frame because such users are prominent only during summer when tourists are around. The survey was conducted at the tail end of summer and the beginning of winter when there were no much tourist activities.

3.4 Summary

The discussion in the chapter shows that advantages abound for applying multi-method in information system research. The bringing together of different methods in a single study, provided a rich understanding of the six communities under investigation.

The chapter that follow present the results obtain from applying the multi-method approach described here.

Chapter Four

Findings

4. Introduction

This chapter describes the findings on how e-commerce are being use by the six pilot communities of the Cape Gateway access project as tools for building knowledge and creating opportunities. The findings is the narration of the one hundred and fifty (150) survey questionnaires administered and sixteen interviews conducted at the different communities, and with the Project Manager at Cel. Though the focus of this research is on the use of e-commerce for small business development, other ICT use and activities are reported here. This provides an understanding of the level the six communities stand with the use of ICT generally.

4.1 Cape gateway access project

The Cape gateway access project is an ongoing initiative of the Provincial Government of the Western Cape, designed and promoted by the Centre for e-Innovation. The objective is to promote the use of ICTs as tools for building knowledge and creating opportunities, especially to empower rural and previously disadvantaged communities of the Western Cape to confront the challenges of poverty and development.

The project is being piloted in six communities, which are at different levels of implementation. The project uses both new and existing infrastructure in local schools and multi-purpose centres to provide access. In communities where there are no facilities, or where extra facilities are required, new facilities were installed for example in libraries. "E-Community forums" have been constituted for the management of the facilities within the communities; members of the e-community forums take on different roles and

responsibilities. Figure 4.0 below describes the structure of the Cape gateway access project and the six pilot communities.
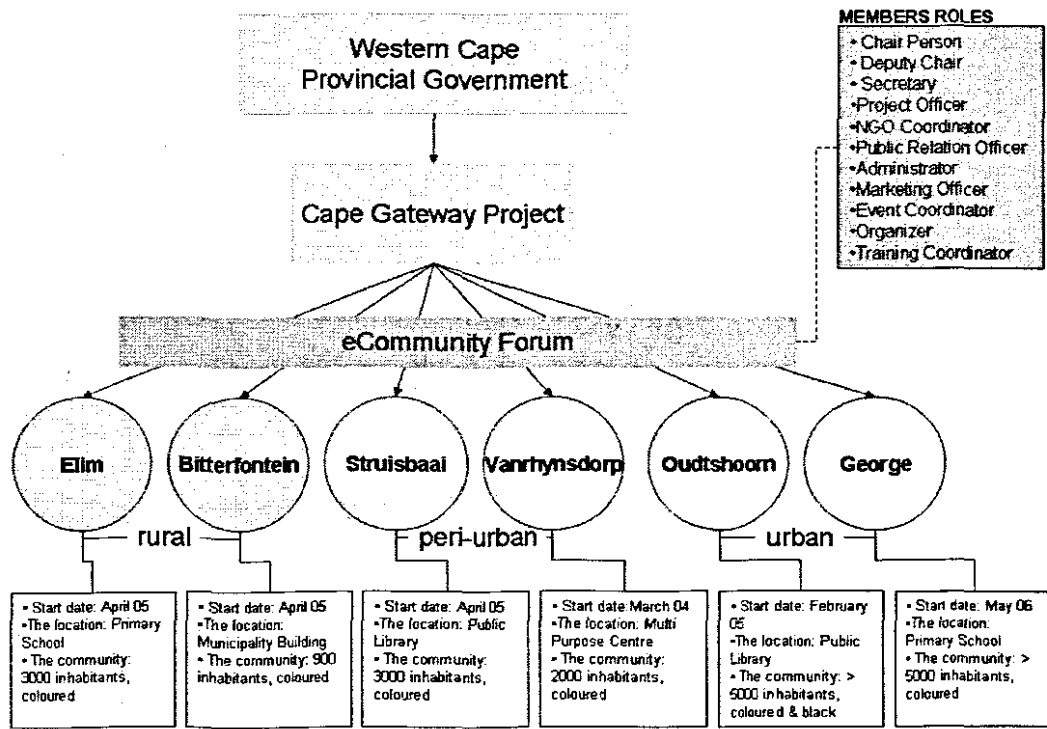
Figure 4.0: The Cape gateway access project structure in six pilot communities (**Source:** Rega & Yakmut, 2006)

4.1.2 e-Community forums

The e-Community forums consist of various representatives from the community, such as community leaders, community NGOs, facility representatives and interested community members. There are eleven members (11) with specific roles or portfolios taking collective responsibility to manage the Cape Gateway access project in each of the different communities. Their task involves mobilizing the community, providing training, and managing access to the facilities. These tasks are assigned to the different members as illustrated under the members' role in figure 4.0. The e-community forum members work on a volunteer basis.

The following Table 4.0 indicates the different names the e-community forums are called at the six locations.

Community	e-Community Forum
Bitterfontein	WestPoint.com
Struisbaai	Bua e-Community forum
Oudtshoorn	Ulwazi e-Community forum
Vanrhynsdorp	Matzi.com
Elim	Elim e-Community forum
George	Conville e-Community forum

Table 4.0: Names of the e-Community forums (**Source**: www capegateway.gov.za)

4.3 Interview outcome

A total of sixteen (16) interviews were conducted as shown in Table 4.1, one interview was with the project manager at Cel in Cape Town. The other interviews were at the six pilot sites. The number of interviews at each site varied – Oudtshoorn had four interviews and George just one. The interviews were conducted during two separate visits for Bitterfontein, Elim, Struisbaai and George. However, the second visit to George was not for an interview, but to accompany another researcher to the site. For Oudtshoorn and Van Rhynsdorp where the pilot was conducted, three visits were made to the locations.

Location	Number of interviews	No. of Business Owners identify
Cape Town (Project Manager)	1	N/A
Bitterfontein	2	0
Elim	2	0
George	1	0
Oudtshoorn	4	2
Struisbaai	3	1
Vanrhynsdorp	3	1

Table 4.1: Interview outcome summary.

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The table above shows that Oudtshoorn had four (4) interviews, being the original number of interviews the researcher intended to conduct at each location. The initial intention was to interview two members of the e-community forum and two identified small business owners running different types of business within the pilot communities of the Cape Gateway access project.

From the interviews with the e-community forum members, it was only within Oudtshoorn that two examples of small businesses using the centre at Bongolethu were identified. One small business was identified in *Vanrhynsdorp and Struisbaai respectively. However, in Elim two implicit examples of small businesses were mentioned by an e-community forum member during interview.* For George at the time of the interviews the facility was being launched and not yet opened to the community. Therefore no significant activity is visible, and only the chairperson of the e-community forum was available for an interview. The outcome failed below expectation, which could mean either there was chance the researcher missed some small businesses, because no one knew what they were doing in the centre or the small businesses using the facility are actually minimal. An abridged samples of the interview transcript is attached (see Appendix A) of the three different categories of interviewees.

4.4 Questionnaire response

As mentioned earlier, questionnaires (see Appendix B) to five communities (George was excluded because there were no users as at the time of this research). A total of one-hundred and fifty (150) questionnaires were administered and screened. The outcome of the responses to the questionnaire is presented in Table 4.2.

Location	Item	Number
Bitterfontein	• Correctly completed questionnaire	15
	• Incorrectly-completed questionnaire (invalid)	1
	• Returned questionnaires (uncompleted)	10
	• Non-responses	4
Elim	• Correctly completed questionnaire	0
	• Incorrectly-completed questionnaire (invalid)	7
	• Returned questionnaires (uncompleted	14
	• Non-responses	9
Oudtshoorn	• Correctly completed questionnaire	14
	• Incorrectly-completed questionnaire (invalid)	2
	• Returned questionnaires (uncompleted)	10
	• Non-responses	4
Struisbaai	• Correctly completed questionnaire	17
	• Incorrectly-completed questionnaire (invalid)	2
	• Returned questionnaires (uncompleted)	5
	• Non-responses	6
Vanrhynsdorp	• Correctly completed questionnaire	21
	• Incorrectly-completed questionnaire (invalid)	1
	• Returned questionnaires (uncompleted)	3
	• Non-responses	5

Table 4.2: Questionnaire response outcome

The outcome of the survey, produced a total of 67 (45%) correctly completed questionnaires, 13 (9%) invalid questionnaires, 42 (28%) uncompleted questionnaires were returned and 28 (19%) of questionnaires were not returned. Though the e-community forum members were co-operative, one is left to wonder whether this extend to the actual distributing and completion of the questionnaires. The researcher also suspects that language and literacy

level of members of the communities are likely factors that could have contributed to invalid questionnaires.

4.5 Findings

The detailed findings from the six communities are presented as follows:

4.5.1 Bitterfontein

This is a rural town located about 398Km north-west of Cape Town. The target community for the Cape Gateway access project, Westpoint, is a previously disadvantaged group with a population of nine hundred and three (903). The main economic activity of the community is sheep farming and there is a rural industry for granite stones that provides the major source of employment.

4.5.1.1 Facility location and description

The Cape Gateway project facility is located in a municipality building that houses the municipality administrative office, a clinic and library (see Figure 4.1). The access computers are within the library. The facility is a 2.5km walk from the target community, and so it is not surprising that at the time of writing the community was agitating for the movement of the project facility to a new building (the tourism information centre, the researcher was informed is more convenient for them in the interim) pending the building of a Multi-Purpose Centre, which eventually will be located right within the community and will serve as the permanent location for the Cape Gateway access project facility. This however will be the responsibility of the municipal administration.

However, the current centre has five (computers) for user access, a printer and a server. The user computers are Pentium II. The Internet connection to the facility is via dial-up using a T1 fixed line from Telkom (the South African incumbent telecommunication monopoly).

Figure 4.1: The Cape Gateway access facility at Bittefontein

4.5.1.2 User demography

The survey showed that:

- 60% of respondents were male and 40 % female.

- The age range of respondents showed that majority (67%) fall within 21 – 30 years range, with 20% under 21 and only a few (13%) older respondents in the age range of 31-40 years.

- The educational level of the respondents did not varied widely, as most of them (93%) have not been educated beyond high school and only 7% have qualification above high school.

- 87% of respondents were unemployed; reflecting the general situation in the community and the community members employed by other organisations were 13%.

- 60% of the respondents visit and use the facility very often and 40% quite often.

Similarly, the interview with the two e-community forum members revealed that:

- The majority of the users of the centre are youngsters, which is a close estimate to what the survey revealed. Unemployment is prevalent within the community, which is evident from the survey results.

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- There are 100 registered users that regularly visit and use the centre.

4.5.1.3 Access to and ownership of e-commerce technologies

A member of the e-community forum interviewed mentioned that there are community members that have mobile phones. He estimated that for every household there is a least one mobile phone. He further stated that a few of the members within the community have fixed telephone line.

The survey data gathered, substantiated these claims. Figure 4.2 shows that 63% of the respondents to the survey have mobile phones, 32% had fixed telephone lines and only 5% had PCs of their own.
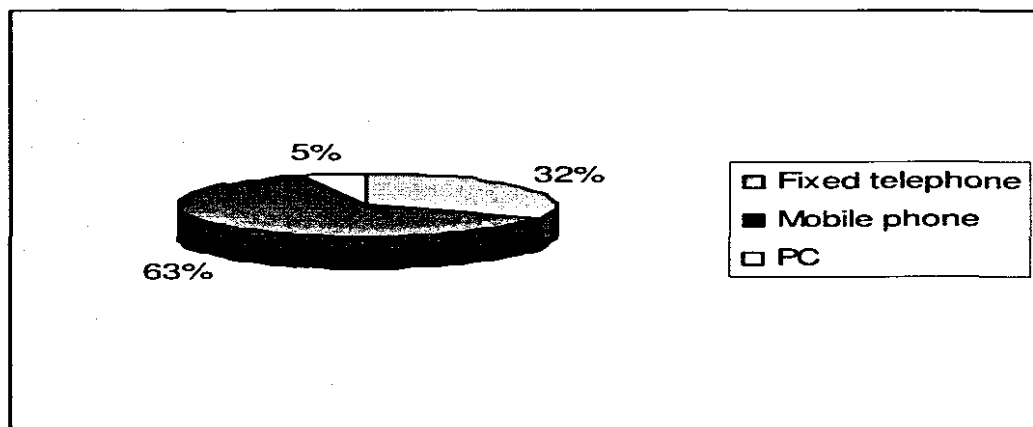
Figure 4.2 Respondents access to and ownership of e-commerce technologies in Bitterfontein.

4.5.1.4 E-commerce and other computer-based activities

In the Bitterfontein centre there was no small business or community member identified using the centre facility for business development or promotion. However, in the interviews with the two e-community forum members, it was mentioned that some members of the community were using the facility for Internet banking. One e-community forum member attempted to put the figure of the community members engaged in online banking at 15.

This may necessarily not be e-commerce, but from the survey responses, three respondents are using the facility for the purpose of online banking,

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specifically for money transfers indicating an element of business to consumer activity. Online banking is important to some members of this community, because the nearest banking facility to the community is about 83Kms.

Since there are few or no e-commerce activities, the community members were using the centre for other purposes. The data gathered on other activities indicated by figure 4.3 showed that all the 15 respondents surveyed use the web to search and research for information. The specific type of information they searched shows that (see Figure 4.4) 60% searched for job advertisement, 33% searched for material for school assignments, 13% search for general information, and surprisingly 7% use it for business research – this was discovered to be staffs of an NGO utilizing the centre facilities to support there ICT needs. Email usage came second in ranking, where 14 of the 15 respondents use it for different purposes, such as responding to or making job application – 53% and personal correspondence – 40%.
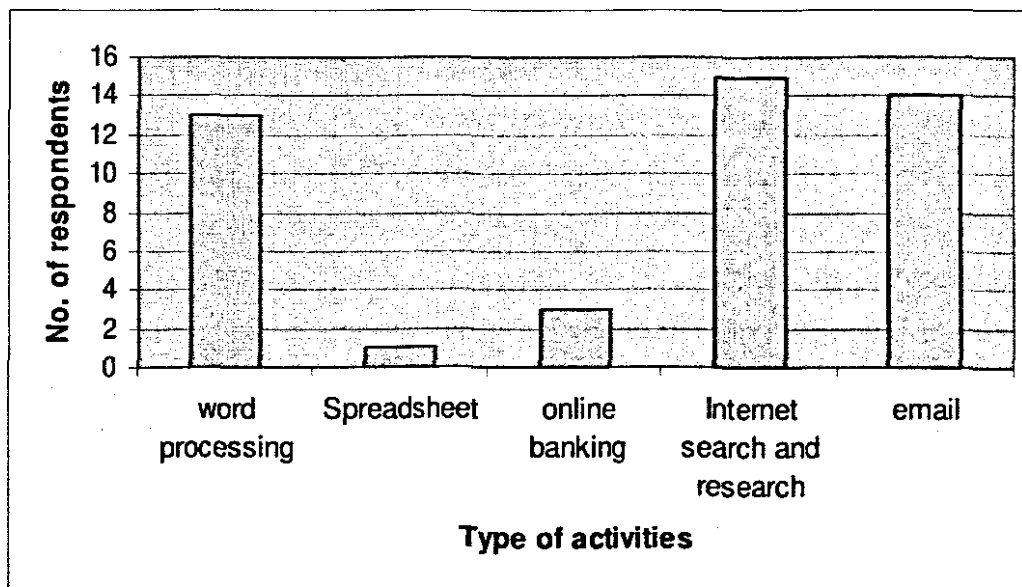
Figure 4.3: E-commerce and other computer-based activities in Bitterfontein.

Other computer-based activities that the users are engaged in are: word-processing – 13 respondents and spread sheet -1 respondent.
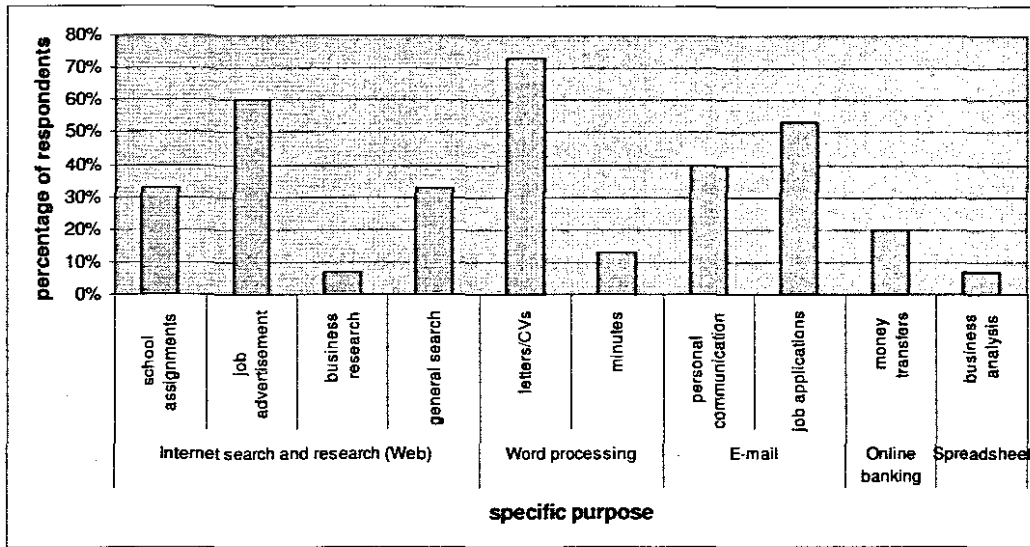
Figure 4.4: Specific purpose for using the facility at Bitterfontein.

Similarly, the e-community forum members interviewed mentioned that most of the users come to the centre to either search for information or do email.

4.5.1.5 Opportunities and benefits to community/small business

Three open-ended questions were asked at the end of the questionnaire for the two categories of possible respondents. The first question asked was what contribution or benefits have the cape gateway access project made to them and their community? There was no specific evidence of using the facility as a business enabler. However, the results from the survey showed that the community members are benefiting from using ICTs and the project facility. Table 4.3 showed that 75% of respondents claimed that using the facility has helped them in job seeking and also made it easier, 33% respondents said it has made access to government information easier and cheaper, and 27% respondents said it has provided them the opportunity to use ICT and be computer literate.

	Type of comments	% of respondents
Opportunities/benefits	a) help and makes job seeking easy	75
	b) provided more access to government information, cutting travel cost	33
	c) an opportunity to use computers and be computer literate	27

Table 4.3: The benefits of using the Cape Gateway access centre/e-commerce in Bitterfontein.

Similarly, some benefits evident in the community mentioned by the interviewees were:

- It provides access to free education
- People have a place now to come and get government services quickly and easier.
- It provides a platform for community members to access information such as business plans.

4.5.1.6 Barriers and constraints

The second open-ended question on the survey questionnaire asked the respondents what problems or challenges are they having with access to the facility and ICTs in general. The survey results (see Table 4.4) revealed that 53% of the respondents see the frequent failure of the computers at the site as a barrier, 13% said non - availability of support when needed is a problem at the centre, 37% said the computers at the centre are outdated, 33% said they lack sufficient skills to access the computer which affects how they effectively use the facility at the centre. The Internet connection is considered very slow by 40% of the respondents and 45% said they have difficulties with access to most of the Internet due to language problem.

	Type of comments	% of respondents
Barriers/constraints	a) most times computers are not working	53
	b) staff support is not always available	13
	c) outdated computers	37
	d) lack sufficient literacy to access the computer	33
	e) slow internet connection, time restrictions usage time is only 45 minutes	40
	f) most material on the Internet is in English	45

Table 4.4: Barriers to access and use of the Cape Gateway access facility/ecommerce technologies at Bitterfontein.

The responses from the survey respondents tally with the comments of the e-community forum members interviewed. One e-community forum member mentioned that the unemployment rate in the community is a problem. The interviewees said the computers are not enough and are slow. One interviewee mentioned that most community members speak and understand only Afrikaans, therefore, materials not in Afrikaans has to be translated for the users when requested but this is challenging for them.

The interviews revealed that the introduction of ICT in the community, poses a challenge of how to teach and educate the community members on how to use computers and access the Internet. As a first step, over 30 community members were trained already.

Further the two e-community forum members interviewed raised the problem that support is not forthcoming when systems are down and the distance (2.5km) of the facility from the community is greatly affecting high community use. One of interviewee mentioned that the time (9.00am - 4.00pm) the centre is open to users is not enough and inconvenient to users such as school

learners. Further he stated that high cost of Telkom services cannot allow him and others to use the Internet outside the facility.

4.5.1.7 Suggestions on improving the project services

The last open ended question required respondents to offer suggestions that could possibly improve the facility at the centre. Table 4.5 summarises the responses from respondents.

	Type of comments	% of respondents
Improvement/additional services	a) need for a change software	27
	b) extend the project to other parts of community	20
	c) need for paid and full time managers	33
	d) provide better and more computers	20
	e) Increase access time at the centre	40

Table 4.5: Suggestions on how to improve access and services at the centre in Bitterfontein.

The e-community forum members said that the immediate improvement, they will want to see on the project is the re-location of centre closer to the community and the extension of opening time. They suggest the centre should also open on Saturdays, which is not the case now.

4.5.2 Elim

This community is located about 265Km south-east of Cape Town, in the Overberg region of the Western Cape. This community is rural and previously disadvantaged, with population of about three thousand (3000), largely Moravian, consisting of farmers, farm workers, artisans and craftsmen prominent for their thatching.

4.5.2.1 Facility location and description

The project facility is located in the Elim primary school (see Figure 4.5; the community has access to the centre only after school hours (4.00 – 9.00 pm). There are twenty (20) computers for user access, a printer and a server at the centre. The user computers are Pentium IIIs and IVs. The Internet

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connection to the facility is via a T1 fixed line. The facility was provided/funded partly by Khanya[16] (www.khanya.co.za) and the school. The Cel is partnering with Khanya and the school to promote ICT activities within this community.

Figure 4.5: The Cape Gateway access facility at Elim

4.5.2.2 Survey failure

The survey in Elim failed. Of the thirty (30) questionnaires distributed in this community only seven (7) were returned but they were all invalid, fourteen (14) was returned uncompleted and eight (8) were never returned. The researcher later investigated this disappointing result, and discovered that the respondents were not properly guided on how to fill the questionnaire by the e-community forum member that volunteered to administer it. However the interview with two e-community forum members gave some insight to the community's use and barrier to access ICTs and future plans

4.5.2.3 Access to and ownership of e-commerce technologies

An e-community forum member interviewed said that most community members have mobile phones and some few have fixed lines at home. The interviewee also mentioned that he does not know whether there are community members that were using their mobile and fixed phones beyond making and receiving regular calls.

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[16] Khanya is project of Western Cape Education Department, designed to provide educators with ICT skills and schools with ICT to enhance learner quality.

4.5.2.4 E-commerce and other computer related activities

Small business development through the use of e-commerce is not visible in this community. However, as a preparatory measure for the community to appreciate and know how to use ICTs, an e-community forum member interviewed mention that one-hundred and twenty (120) community members were trained on basic ICT skills and plans are under way to introduce the use of ICTs for small business development.

The interviewee said that a few community members that had prior ICT skills were using the facility to do e-mail and search the Internet for information. He further claimed that the facility was used by some community members to access government services such as applying for social grants, pensions and looking for government tender information on the Cape gateway portal. He mentioned a specific example of a small transport entrepreneur that uses the facility to constantly check for government transport tenders.

4.5.2.5 Opportunities and benefits to community/small business

The interview with another e-community forum member revealed that one community member involved in thatching, believes that through the use of the Internet especially, having website will provide a platform to advertise his business of thatching to other parts of South Africa.

The e-community forum member said that because of people like the thatching entrepreneur, they have in their strategic plan, a sub-project targeted at developing small businesses, entrepreneurs, farmers and individuals through the use of ICTs, creating websites, marketing, financial management and Internet banking. He also said that access to the centre will provide the opportunity to provide skills to community members.

4.5.2.6 Barriers and constraints

The interviewees revealed that as e-community forum executives they are faced with the challenge of showing the community that ICTs are beneficial.

Particularly constraining is the time the community comes to access the centre, this he said is very inconvenient.

An interviewee indicated that, the arrangement for settling the Internet access fee by Cel has not been formalised. Therefore, the operation of the centre is being affected.

4.5.2.7 Opinion on improving the project services

An interviewee said that having a community access facility separate from the school facility will facilitate more community usage. Furthermore, he believes if more time is available to users there will be an improvement in meeting the project objectives. More importantly, he thinks more government and NGO support within the community is needed in making ICT more accessible.

4.5.3 George

George is one of the major cities of the Western Cape located about 435Km east of Cape Town. The target community for the project is situated in Cornville, a previously disadvantaged community. The population of the target community is put at over five thousand (5000). The community is largely unemployed. Those community members working go to the other parts of the city to work for large businesses. However there are small business owners within the community.

4.5.3.1 Facility location and description

The project facility is located in Cornville primary school as shown in Figure 4.6. As at time of visit to the location, the facility was not yet in use by the community. However, when it opens it will be accessible to the community after school hours (4.00 – 9.00 pm). The setup here is similar with that of Elim; there are twenty (20) computers for user access, a printer and a server. The user computers are Pentium IIIs and IVs. The Internet connection to the facility is via wireless access to a local ISP. The facility was provided/funded partly by Khanya (www.khanya.co.za) and the school. The Cel however

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provided funds for the Internet access and continues to pay the monthly access charge and partnering in regard to computer use.

As a result of late start of this project here administering questionnaire was not feasible; however an interview was conducted with the chairperson of the e-community forum. The interview was basically to ascertain why there was delay in starting the project in Conville and what benefits from the project will accrue to the community as they engage with ICTs.

Figure 4.6: The Cape Gateway access facility at Conville, George.

4.5.3.2 Interview outcome
The interview revealed that:

- The centre started in the last quarter of 2005, however take off was delayed until May, 2006.
- Logistic issues and the Internet connection to the centre delayed the take off of the centre, because Telkom could not provide ADSL[17] connection from the distribution within the community, and ISDN[18] connection is very expensive.
- Three projects will be executed immediately on starting
   i) Providing access to information for tuberculosis patients and families.

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[17] Asymmetric Digital Subscriber Line
[18] Integrated Services Digital Network

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ii) To use ICTs to take kids off streets, by exposing them to skills development.

iii) Using the facility for career guidance for grades 11 and 12 for historically deprived schools (coloured and black schools)

- Provide access to small entrepreneurs to use the facility for accessing tender information and promotion of their businesses.
- There was enthusiasm by community members to start using the facility.
- This facility will be use to support community members especially retirees and social grant seekers to fill forms online.
- The centre will provide access to government information and services.
- Future plans:
    i)   Create a separate room for the e-centre separate from the school computer laboratory.
    ii)   If this centre succeeds, other centres will be established at other surrounding communities such as Tambeluthu.
- There is a MPCC[19] within the community with 10 computers providing ICT training to community members at highly subsidised fees.
- The trainees at the MPCC are mostly young.
- Most community members are not computer literate.

This location gives an indication of typical viewpoints at the start of a new intervention.

4.5.4 Oudtshoorn

This is one of the four major towns of Western Cape located in the Klein Karoo, it is situated about 410Km east of Cape Town. It is referred to as the 'ostrich-feather capital' of the world, as well as having the famous Cango caves; it is famous for tourism and arguably the most-visited town in South Africa. The Bongolethu community where the project is located is a poor and

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[19] Multi-Purpose Community Centre

previously disadvantaged community, surrounded by other similar communities.

4.5.4.1 Facility location and description

The project facility is located in the library (see Figure 4.7), which is accessible to the community from 9.00am - 5.00pm and sometimes extends to 7.00pm. There are five (5) computers for user access, a printer and a server. The user computers are generally Pentium Is. The Internet connection to the facility is via a T1 fixed line.

Figure 4.7: The Cape Gateway access facility at Bongolethu, Oudtshoorn

4.5.4.2 User demography

The demographics of the questionnaire respondents showed that:

- 71% of the respondents were male and 29% female
- 43% of respondents were under 21, 43% were between the ages if 21 to 30 and 14% were in the age range of 31- 40.
- 57% of the respondents are either in high school or had grade 12. 29% of the respondents had diploma, 7% had education up to 4 year degree and another 7% had a post-graduate qualification.
- More than half of the respondents (57%) are unemployed, 37% are employees and 7% are self-employed.
- 50% responded that they visit the centre very often, 29% said often and 21% not often.

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The interview with e-community forum members also revealed that:

- The majority of users that come to the centre are young people from 12 years and above.

- The users are mostly high school pupils, community members that have just graduated from high schools and few others that have higher qualifications.

4.5.4.3 Access to and ownership of e-commerce technologies

Interestingly it was only in this community that some respondents (21%) of the survey questionnaire did not have any e-commerce technology of their own or at home. However, most of the respondents (79%) have mobile phones (see Figure 4.8), 29% were discovered to have fixed line telephones and 21% have a PC. The data also includes an entrepreneur respondent that completed the questionnaire.
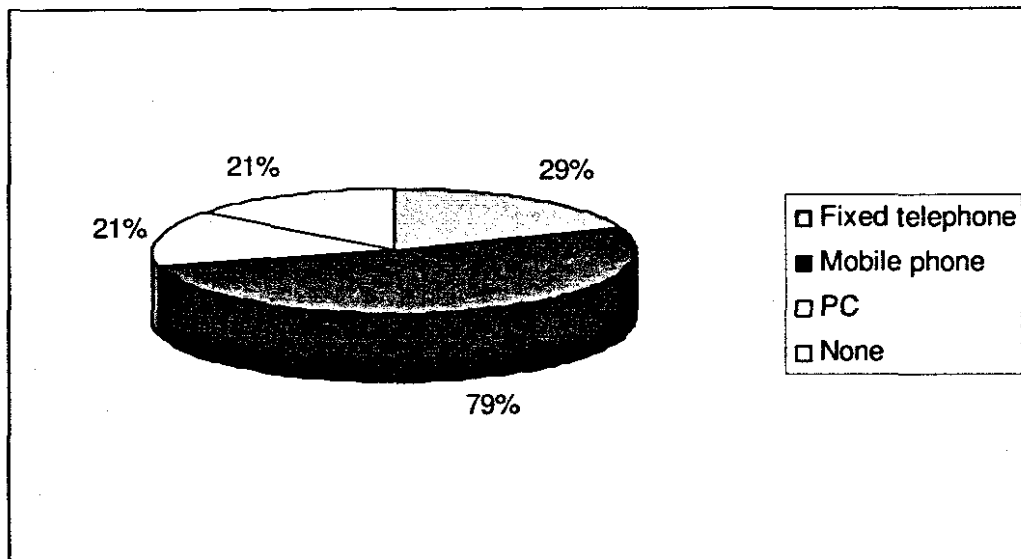
Figure 4.8: Respondents access to and ownership of e-commerce technologies in Oudtshoorn.

Similarly, the e-community forum members interviewed confirmed that most community members have mobile phones, and there are quiet a number of

community members that have fixed telephone at home and substantial number can access fixed phone from the public phone within the community.

This community seems to put the Cape Gateway access centre to full use. Two entrepreneurs were discovered actively engage in using e-commerce for the development and promotion of their small business. The two entrepreneurs when interviewed indicated they have mobile phones, and use the computer facility at the centre for most of their business computing needs.

4.5.4.4 E-commerce and other computer related activities
The outcome of the survey in this community had one business owner that completed section two of the questionnaire. The section seeks to identify what type of business and related business activities that using the Cape Gateway access centre is promoting.

The findings showed that:
- The entrepreneur was a co-owner of small construction business, with less than 50 employees and a target market within the local community and Western Cape.
- The business owner relies on the traditional sources of information such as newspapers, magazines, radio, television government bulletin and small business support centre for his business information.
- The entrepreneur stated that getting good quality information on existing customers and new local customers has not been easy without access to an Internet facility such as the Cape Gateway access centre. However, access to information on laws and regulations, sources of finance, training and government information tenders has not been difficult without the centre.
- The entrepreneur had access to information more easily with using the Cape Gateway access project facility.

- Surprisingly, the entrepreneur stated that face-to-face meeting and magazine advertisement is more effective for him to promote his business than any other method such as web advertisement.
- For business communication the entrepreneur uses fax, fixed line, mobile phone and e-mail. Using the computer for word processing and the Internet is a common feature of the business.

Figure 4.9 shows that:
- 6 (43%) of the respondents are engage in using word processing,
- 13 (93%) of the respondents use the centre to surf the Internet, and
- 11 (79%) of the respondents use the facility for e-mail.
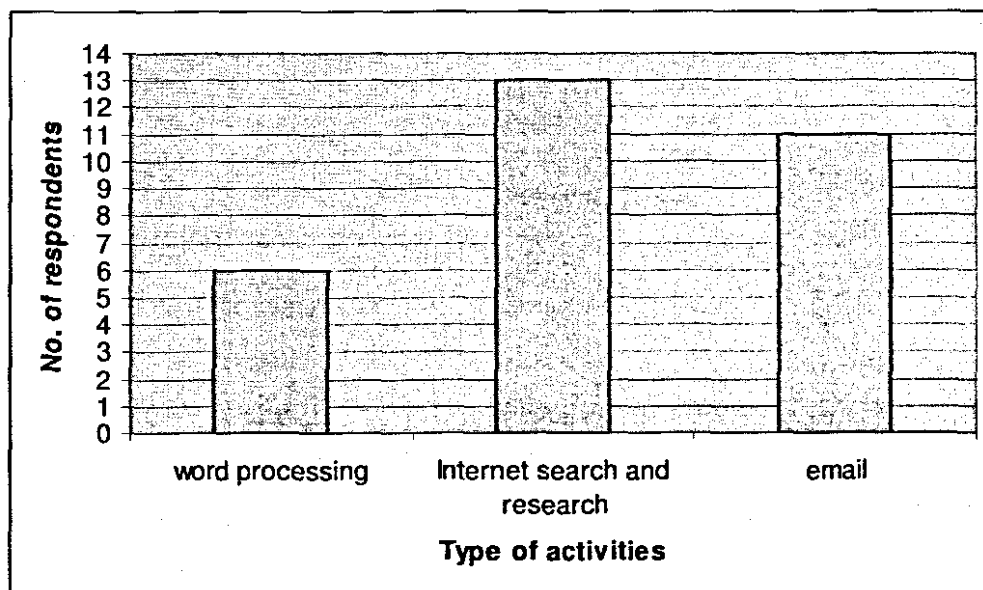
Figure 4.9: E-commerce and other computer related activities in Oudtshoorn.

Figure 4.10 describes the specific purposes the users are putting the computer and Internet to. The results showed that majority (79%) of the respondents that use the Internet search for general information, the school pupils (36%) and job seekers (36%) use the Internet to search for information on school assignments and job advertisement respectively and only 7% use it for the purpose of searching for information on business. The respondents

(43%) that use word processing said they use it to create letters or CVs. 79% of the respondents said that personal communication is the purpose for using email and 27% said they use e-mail to respond to job applications.
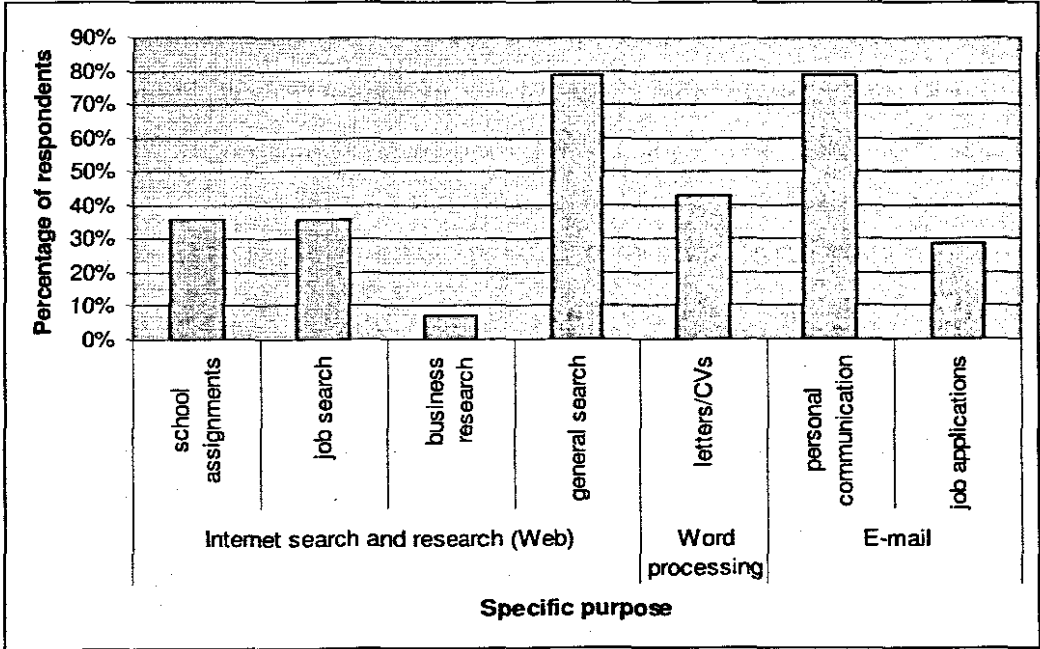
Figure 4.10: Specific purpose for using the facility at Oudtshoorn.

The interviews with the e-community forum members showed that the younger and the older users use the facility for different purposes. The encounter with an e-community forum member revealed that older people that visit the centre use the facility for Internet banking, to look up government tender information on the government portal, and the business minded ones come to seek for information on how to start a business and how to write a business proposal. She further said that the younger ones especially the school learners use the facility for school activities, however when not properly supervised they tend to use it for games.

The two e-community forum members interviewed revealed further that some community members use the facility to read newspapers, apply for grants and do e-mail. Specifically, the interview revealed that there were two members of

the community that were using the facility for the promotion and running of their small business. However it was discovered that the two small business owners had participated in the e-community forum, one actually is still a member of the forum.

The two small business owners found were interviewed. The first one provides ICT services such as computer and accessories sales, web design and hosting and uses the Internet extensively for his business. The website (see Figure 4.11) of the ICT entrepreneur allows for online purchase. This business owner relies entirely on the Cape Gateway access facility for starting and running the business.
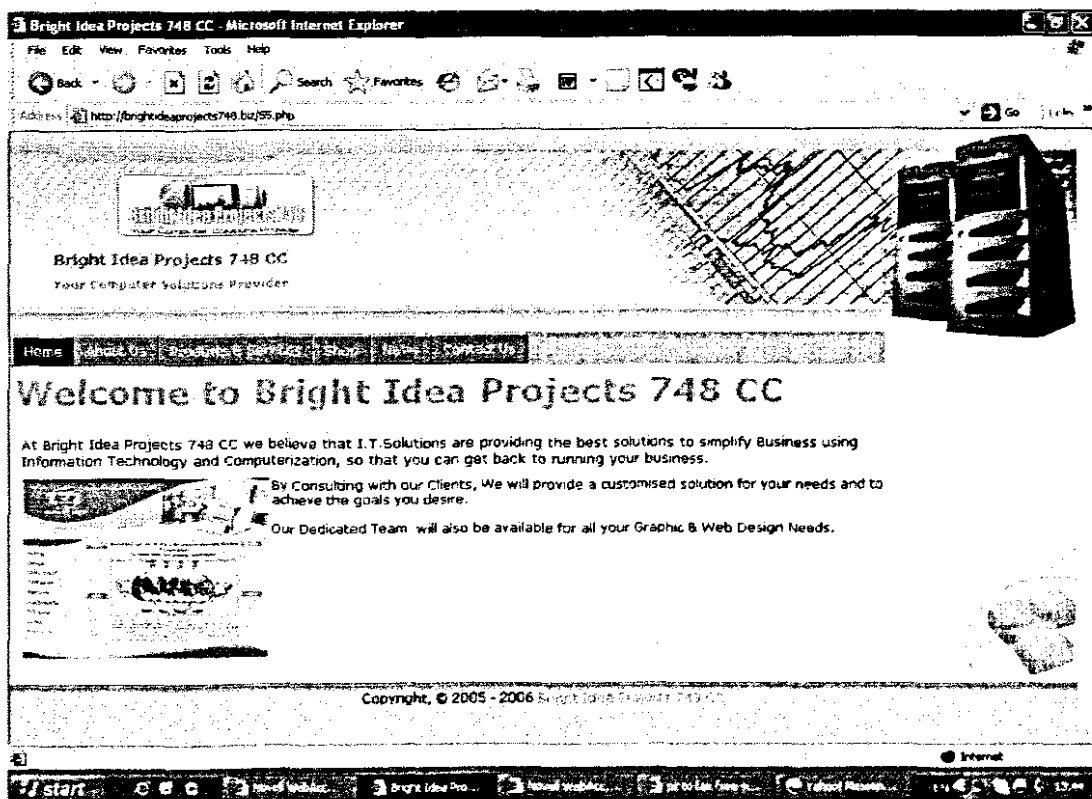
Figure 4.11: Website of the ICT entrepreneur in Oudshoorn (**Source:** www.brightideaprojects748.biz)

The second small business owner is involved in Township tours. He was a member of the e-community forum. He used the facility extensively to research on township tours on the Internet for three months before he started the business and uses the facility for his emails mostly. However, he has a basic webpage (describing the business and providing contact information), hosted on the Oudtshoorn tourism information website (see Figure 4.12).
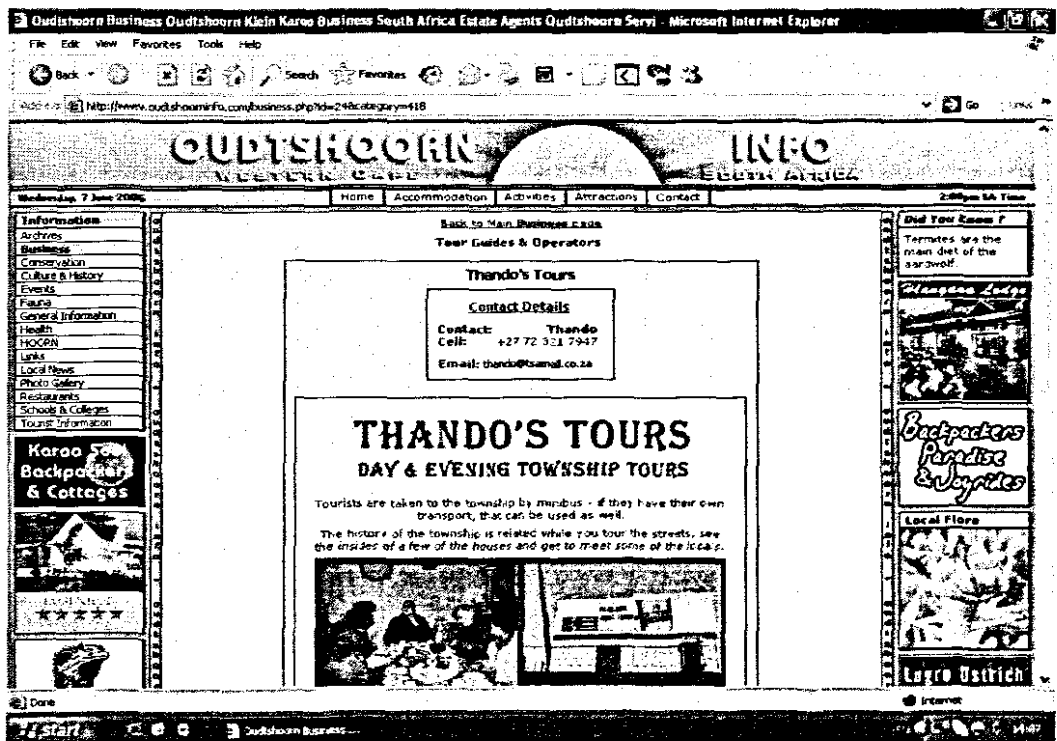
Figure 4.12: Webpage of township tours entrepreneur in Oudtshoorn
(Source:www.oudtshoorninfo.com).

4.5.4.5 Opportunities and benefits to community/small business

Table 4.6 revealed that, 64% of the respondent who are school learners had benefited because they are able to access technology. 36% of the respondent mentioned the benefit comes from being an informed community and 29% said the centre had provided them with a communication hub.

	Type of comments	% of respondents
	More informed community	36
	Help school learners access technology	64
	Free communication hub	29

Table 4.6: The benefits of using the Cape Gateway access centre/e-commerce in Oudtshoorn.

The interviews with the two e-community forum members revealed that using the facility provides access to a cheap medium to talk to government and vice versa. The first e-community forum member interviewed said the facility had benefited a number of community members that come to the centre. Specifically the two small business owners, who have started their business, are essentially benefiting from free Internet access. She also believes that the Internet provides ample opportunities and benefits for small business owners, especially the arts and craft artisans within the community. The outcome of the interviews also revealed that school learners are benefiting from obtaining substantial up-to-date and relevant information for their school assignments. What was further revealed during the interviews was that some community members were using the Internet to access information on starting small business and accessing government tender information online.

The ICT entrepreneur interviewed said he has benefited significantly from access to the Cape Gateway access project; because it has enabled him to promote his business through the website he had created. He said he is specifically benefiting from free Internet access. He further mentioned that since he created the website over 500 potential customers have visited the site, and he had transacted business with over 65 clients.

The interaction with the township tours entrepreneur revealed that from the knowledge he had of the potential benefits of Internet, he has particularly enjoyed a tremendous exposure and patronage from potential tourists. This

was possible because of the web presence his business has. He particularly mentioned that he was invited to the last South African tourism "Indaba" in Durban, because the organisers got his contacts from the website. Before the web presence, he said he was struggling to market the business through brochures.

4.5.4.6 Barriers and constraints

This community is faced with similar problems as the others. The survey results, Table 4.7 showed that 50% of the respondents complained that the free and open source software (FOSS) on the systems impedes their ability to fully use the computers. The computers are slow and old were the response of 64% of the respondents and similarly, 71% said the Internet is also slow. The lack of sufficient skills is claimed by 36% of the respondents as the barrier they face in using the computers. 21% of the respondents said that the non-availability of managers to support users when they need assistance is discouraging. The closure of the centre at times deters enthusiastic users coming to the centre.

	Type of comments	% of respondents
Barriers/constraints	Software on computers not suitable	50
	Computers are slow	64
	Internet is slow	71
	Not very skilled in using computers	36
	Absence of managers	21
	Unnecessary closure of centre	14

Table 4.7: Barriers to access and use of the Cape Gateway access facility/ecommerce technologies at Oudtshoorn.

The interviews with the e-community forum members revealed a number of barriers and challenges that users of the centre and community members are facing within this community:

- The e-community forum members are finding it difficult to mobilise community members to use the facility. A football competition was

organised among the youths of the community as a strategy to get them aware of the centre and the benefits it can offer. This, the researcher was informed did not yield the desired result, as no significant increase of users was seen.

- The adult population are not very literate and are not skilled with computers.

- Most small business owners within the community are unaware that using the Internet will bring any value to their business.

- The inability of e-community forum members to use the FOSS on the computers has impaired their plan to provide training to users.

The interview with the ICT entrepreneur revealed that though he has a PC at home, he cannot afford to have an Internet access because of the cost. Moreover, for his kind of business he said he will need an ADSL connection which the Telkom exchange within the community cannot support, even though ADSL is available in some parts of the city.

The tour entrepreneur said for him and other users that depend on the centre for Internet access the slowness of the connection is a problem. Another barrier he faces is that of high cost of telecommunication services, which prevents him from extensive use of ICTs outside the centre.

4.5.4.7 Opinions on improving the project services

The respondents to the survey believe that if the facilities are improved and the community members are encouraged in using it then the ICT usage will flourish among them. 43% of the respondents said that more training will improve their ability to use the computers and 21% feel that the managers especially government, should involve the community when developing similar projects in the future (see Table 4.8). 64% of the respondents said that additional computers will make the centre more usable; the Internet connection speed need to be improved, was the comment of 71% of the

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respondents and 14% of the respondents said that full time managers should be recruited for the centre, to provide the required support for users.

	Type of comments	% of respondents
Improvement/additional services	More training for community members	43
	Involve community more	21
	Additional computers	64
	Faster internet connection	71
	Full time managers	14

Table 4.8: Suggestions on how to improve access and services at the centre in Oudtshoorn.

4.5.5 Struisbaai

Struisbaai is a peri-urban town in the Overberg region of Western Cape, located about 238Kms south-east of Cape Town, it is a popular coastal holiday and fishing community. The Bua community where the project facility is located is a previously disadvantaged community with population of nearly 2000, largely consisting of fishermen.

4.5.5.1 Facility location and description

The project facility is located in the library (see Figure 4.13), which is accessible to the community from 9.00am - 5.00pm. There are five (5) computers for user access, a printer and a server. The user computers are generally Pentium Is. The Internet connection to the facility is via dial-up using a T1 fixed line.

Figure 4.13: The Cape access gateway facility at Struisbaai

4.5.5.2 User demography

The survey results obtained from this community showed that:

- 47% of respondents were male and 53 % female.

- The age range of respondents showed that majority (47%) are within the under 21 age group, 18% are within the range of 21 – 30 years, 24% are within the range of 31 – 40 and a few (12%) older respondents are within 41- 50 years age group.

- The educational level of the respondents did varied widely here, as 29% are in grades 1 to 7. Those either in high school or matriculates are 41%, 18% had diploma and 12% had a degree.

- 24% of respondents are employees of other organisations, 18% are self-employed, and 59% are unemployed.

- The centre has 472 users. Of those surveyed 59% visit and use the facility very often and 29% often, and 12% not often.

The interviews with the e-community forum members revealed also that most users are youngsters. During a second visit to this site, the researcher discovered that the e-community forum conducted a survey interview in March, 2006 to ascertain the computer literacy and awareness of the community about the project. The outcome of the survey showed that those that have exposure to computer facilities are also mostly youth and young adults.

4.5.5.3 Access to and ownership of e-commerce technologies

Responses to the probe about what type of ICT devices the respondents have access to and use either at home or office indicated by figure 4.14 showed that 59% of respondents claimed they have fixed telephone, 94% have mobile phones and 29% have PCs.
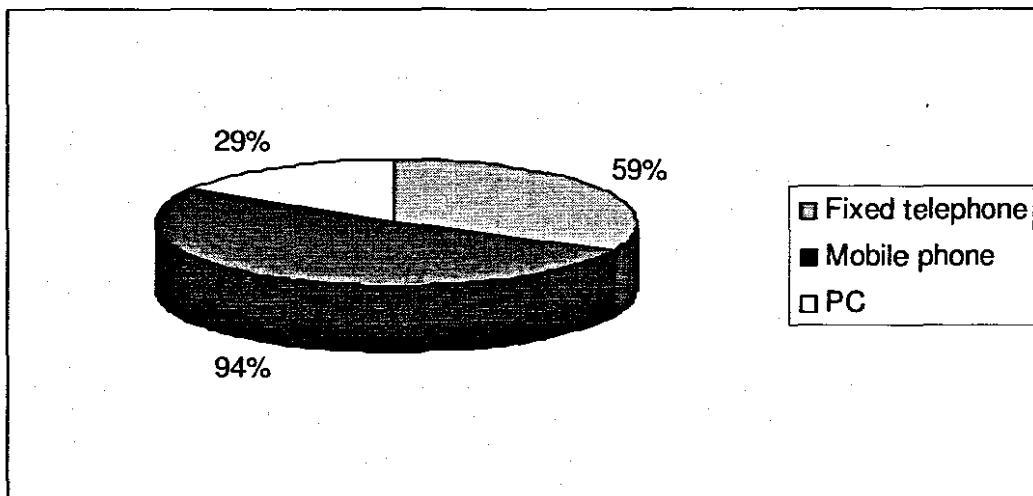
Figure 4.14: Respondents access to and ownership of e-commerce technologies in Struisbaai.

The interviews with the e-community forum members revealed that most community members have mobile phones and a sizeable number of them have fixed telephone. One member mentioned however it takes long time to get Telkom fixed line installed. The survey interview conducted by the e-community forum also showed that 21% of the community members have got computer facility.

4.5.5.4 E-commerce and other related computer activities

The survey and interviews revealed that there was some understanding of what ICTs can do within this community. In the course of the interviews an example of a community member starting a small business was discovered.

The survey results (Figure 4.15) showed that users are using the facility at the centre for different activities. 16 respondents said they use the facility for Internet and email. 9 users said they use word processing and 3 users said they do online banking. However, the detailed purpose of activities they do vary, but in some situations a user is involved with more than one activity.

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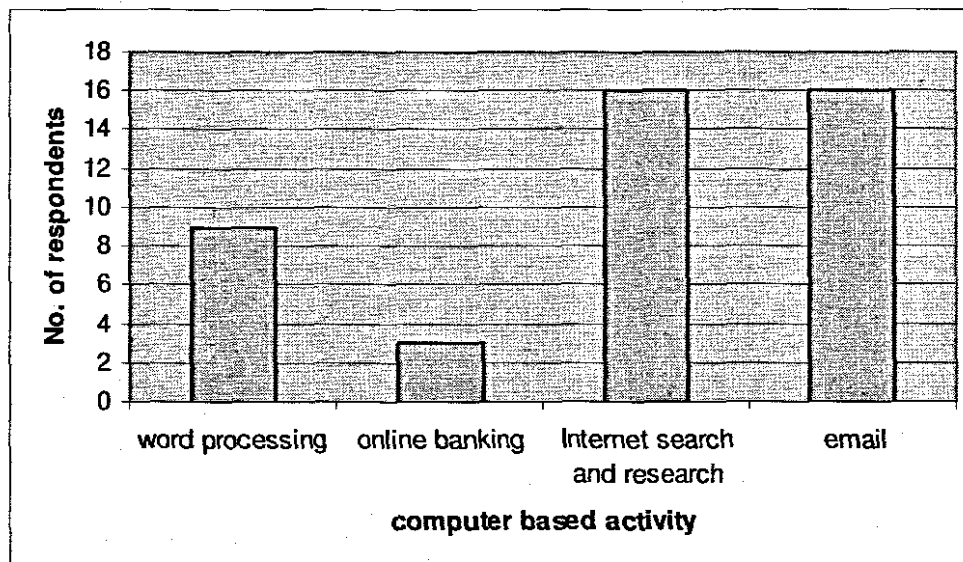
Figure 4.15: Ecommerce and other related computer activities in Struisbaai.

Figure 4.16 indicates the activities, which are summarised as follows:

- Assessing Internet for school assignments - 35%, seeking jobs online
  – 65%, accessing government portal – 29%, copying music lyrics –
  18%, accessing fishing information for fishermen – 35%, and general
  search – 33%.

- Uses word processing for writing letters and CVs – 41%, and making
  posters 12%.

- Email is used for personal communication by 41% and 53% for job
  applications.

Percentage of respondent

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

school assignments
job advertisement
government portal
music lyrics
fishing information
general search
letters/CVs
making posters
personal communication
job applications
money transfers

Internet search and research (Web)   Word processing   E-mail   Online banking
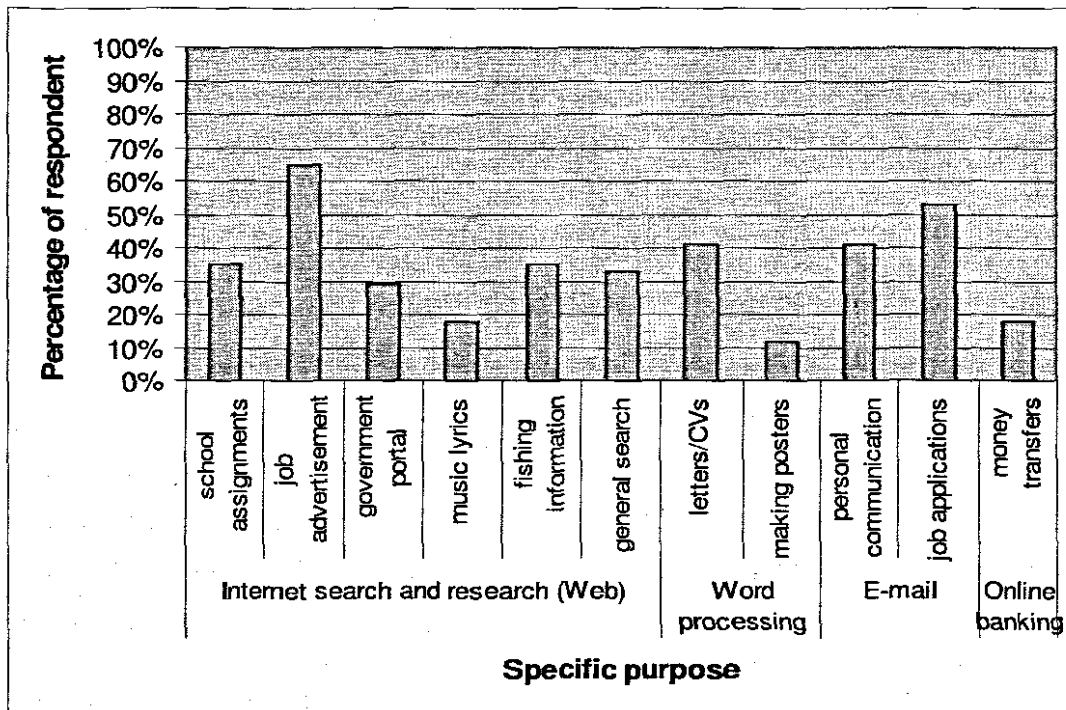
Specific purpose

Figure 4.16: Specific purpose for using the facility at Struisbaai.

The interviews with e-community forum members revealed similar and interesting activities of users. The e-community forum members' interviewed mentioned that the younger members of the community, especially the primary school children use the computers mostly for games. Figure 4.16 does not show games as an activity, because the youngsters that completed the questionnaire do not want to reveal that they use the computers for games, though the managers of the facility are aware of that. However, games were not recorded by the youngsters as one of the activities they are engaged in. However the high school students use the Internet at the facility for searching information for school assignments, and they are given priority over the younger ones when the need arises.

One e-community forum member said that a few older community members are using the facility for Internet banking. Both e-community forum members

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mentioned that some of the major uses were in assisting the fishermen to apply and renew their licenses, and download up to date weather information for the fishermen, print and paste it at the harbour notice board before they set sail. The comment by one e-community forum member revealed that a nurse within the community uses the facility specifically to access health information and tariffs.

The entrepreneur interviewed, stated that though he uses the Cape gateway access facility to carry out his work, he has Internet connection at home. He uses the Internet very much, to access information for his computer business, by sourcing for cheap prices for parts and downloads of software upgrades and patches. He also connects community members to Internet through the use of old model of Motorola mobile phone. He also said he plans to have his website up and running very soon.

4.5.5.5 Opportunities and benefits to community/small business

The respondents to the survey agreed that the facility and ICTs in general have provided some form of benefits. Table 4.9 shows the percentage of responses to the first open-ended question that seeks to know what benefits community users are getting from the use of the Cape gateway access facility:

Opportunities/benefits	Type of comments	% of respondents
	a) important weather information for fishermen.	41
	b) low cost and easy access to government information.	35
	d) improvement in knowledge	53
	c) reduction of poverty	24
	e) learning opportunity	47

Table 4.9: The benefits of using the Cape Gateway access centre/e-commerce in Struisbaai.

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41% of the respondents said that the ability of the community to access up to date weather information was very beneficial to the fishermen. Low cost and easy access to government information was claimed by 35%, as the benefit they are deriving from the use of the facility. More than half the respondents (53%) said that their benefit comes from improving their knowledge. 24% claimed that the centre has benefited the community in reducing poverty, and 47% claimed the facility is an opportunity for them to learn about ICTs.

The interviews revealed a number of benefits for the community. Both e-community forum members corroborated the statement that the fishermen are substantially benefiting from use of the Internet for applying for new and renewal of fishing licenses. They claimed that as much as over R100,000.00 had been saved for the fishermen as a result of free access at the centre. One e-community forum member mentioned that the facility and access to the Internet has opened up an opportunity for the community to create jobs and improve their skills.

The small business owner interviewed, stated that his business is thriving because of the substantial benefit he gets from using the Internet to get information. This has improved his income, he said.

4.5.5.6 Barriers and constraints
The second open-ended question in the survey questionnaire revealed that this community is also encountering barriers to using ICTs. The survey results (Table 4.10) showed that 94% respondents claimed that the Internet is very slow, 59% reported that the computers at the centre are out-dated, 53% claimed they lack adequate skills to use the computers at the centre, and 18% see poverty as the reason they cannot access ICTs.

Barriers and constraints	Type of comment	% of respondents
	a) Internet is very slow	94
	b) Computers are old	59
	c) inadequate skills	53
	d) poverty	18

Table 4.10: Barriers to access and use of the Cape Gateway access facility/ecommerce technologies at Struisbaai.

Similarly, during the Interviews both e-community forum members said that the community is generally faced with poverty. One e-community forum member said that Internet is expensive hence the community cannot afford it. During the interview it was also mentioned that community members are not literate and skilled enough to unlock the benefits of Internet, especially they lack the awareness. Another barrier mentioned by one of the e-community forum member was that community members are afraid to use ICTs, especially the computers at the centre.

The outcome of the survey conducted by the e-community forum showed that 46% of the respondents lack ability to unlock the benefits of ICTs and 83% said that their knowledge of using the Internet is very limited.

4.5.5.7 Opinions on improving the project services

The third open-ended question on the questionnaire, that seeks to know the opinion of the community members on what additional and improved services the centre can offer them revealed the following (see Table 4.11):

- 18% of respondents think updating or changing the software will improve access and use of the computers.
- 100% of respondents said increasing the number of computers and changing or improving them will be good.
- 76% of respondents think that constant provision of skills development sessions will improve their ability to use the facility and ICTs in general.

Improvement/additional services	Type of comment	% of respondents
	a) update or change software	18%
	b) increase number of computers and change old ones	100%
	c) availability of constant skill development	76%

Table 4.11: Suggestions to improve access to ICTs and service at the centre.

The interviews with the two e-community forum members showed that the computers and the Internet at the centre are very slow. They also lend their voice to the agitation for more and faster computers, and faster Internet. They claimed that this will improve the project services within the community.

The entrepreneur interviewed said that such projects should be crafted such that it is clearly aimed at addressing the ICT access needs of the community and how it will empower them economically. He further said it is important for small business owners to know exactly how such project can benefit their business.

4.5.6 Vanrhynsdorp

Vanrhynsdorp is a peri-urban town, located about 316Kms north-west of Cape Town; it lies along the Olifants tourism route. The community is a previously disadvantaged community with population of about 3000 and largely unemployed.

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4.5.6.1 Facility location and description

The project facility is located in the Multipurpose Community Centre (see Figure 4.17), which is accessible to the community from 9.00am - 5.00pm. There are five (5) computers for user access, a printer and a server. The user computers are generally Pentium IIs. The Internet connection to the facility is via dial-up using a T1 fixed line.

Figure 4.17: The Cape Gateway access facility at Vanrhynsdorp

4.5.6.2 User demography

The demographics of the respondents showed that:

- 52% of the respondents are males and 48% are females.
- The majority of respondents (57%) are within the age range of 21 – 30 years, 24% are under 21 years old and 19% are within the range of 31 – 40.
- Most respondents (57%) are either still in high school or have completed grade 12. 14% are in grades 1 to 7, and 29% respondents have diploma.
- 52% of respondents are unemployment and 48% are employed, working for other organisations.
- There are about 300 registered users. 57% of respondents visit the centre very often, 29% often, and 14% not often.

The interview with e-community forum members also revealed that most users of the centre are youngsters. They mentioned that the older members of the community are not using the facility as much, because they are not

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very literate. Generally, the older group prefers to encourage their children to come to the centre instead.

4.5.6.3 Access to and ownership of e-commerce technologies

A substantial number of the community members have mobile phones; this was confirmed by 95% of respondents. More than half the respondents (59%) had fixed phones at home/office and 10% had PC. The chart in Figure 4.18 shows the graphical representation of the respondents.
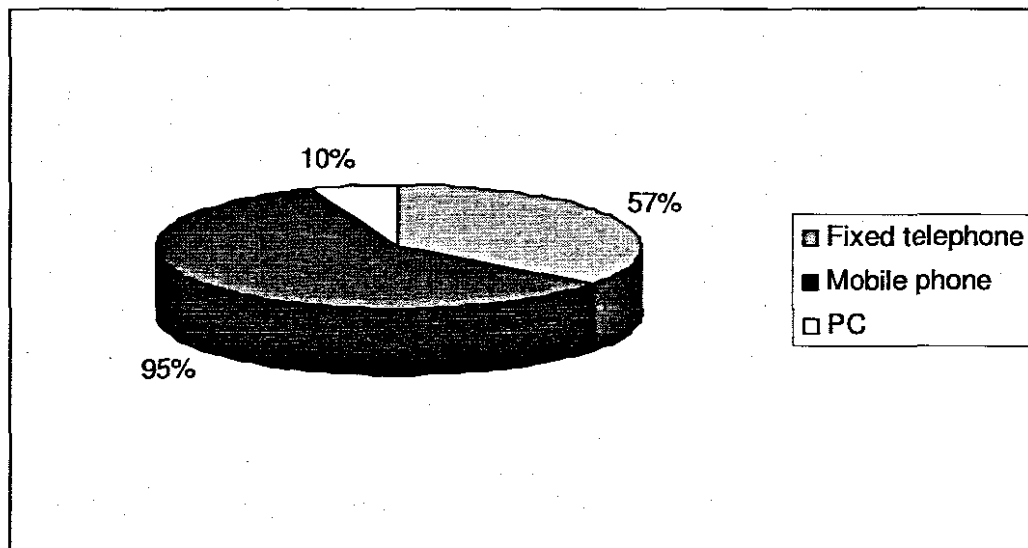
Figure 4.18: Respondents access to and ownership of e-commerce technologies in Vanrhynsdorp.

The interview with one of the e-community forum members also confirmed that most community members have mobile phones and some community members have fixed telephones. The interviewee further mentioned that most community members use the public fixed phone more extensively.

A real estate business owner identified and interviewed had a computer, a fixed line and a mobile phone.

4.5.6.4 E-commerce and other related computer activities

Figure 4.19 shows computer based activities of the respondents at the centre. Almost all the respondents (20) indicated that they use email, 19 respondents mentioned that they use the Internet for searching and looking for information, 15 use the computer to do word processing and 5 respondents use spreadsheet.
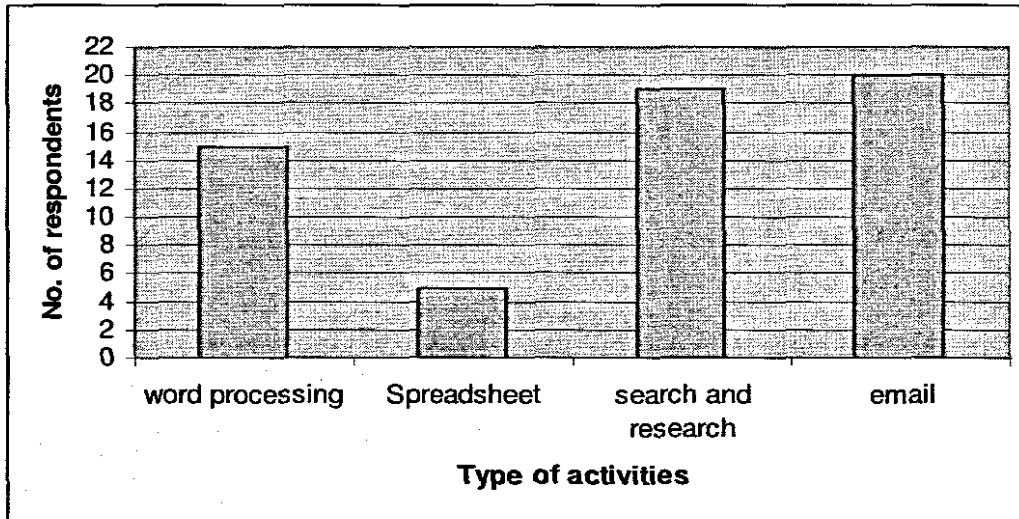
Figure 4.19: E-commerce and other computer related activities in Vanrhynsdorp

The specific purposes the users are involved with, illustrated by Figure 4.20 showed that:

- 48% used the computers for searching information for school assignments, 38% search for jobs, 10% apply for higher education bursary, 10% look for government tenders online, and 38% search for general information, without being specific.

- 14% used the computers to write reports, 57% write memos, 52% create their CVs and 10% write minutes.

- 95% used the facility for personal communications and 43% for job applications.

- The respondents here use spreadsheets, 10% used it for data analysis, 10% to keep track of personal finances and 5% for budgeting.
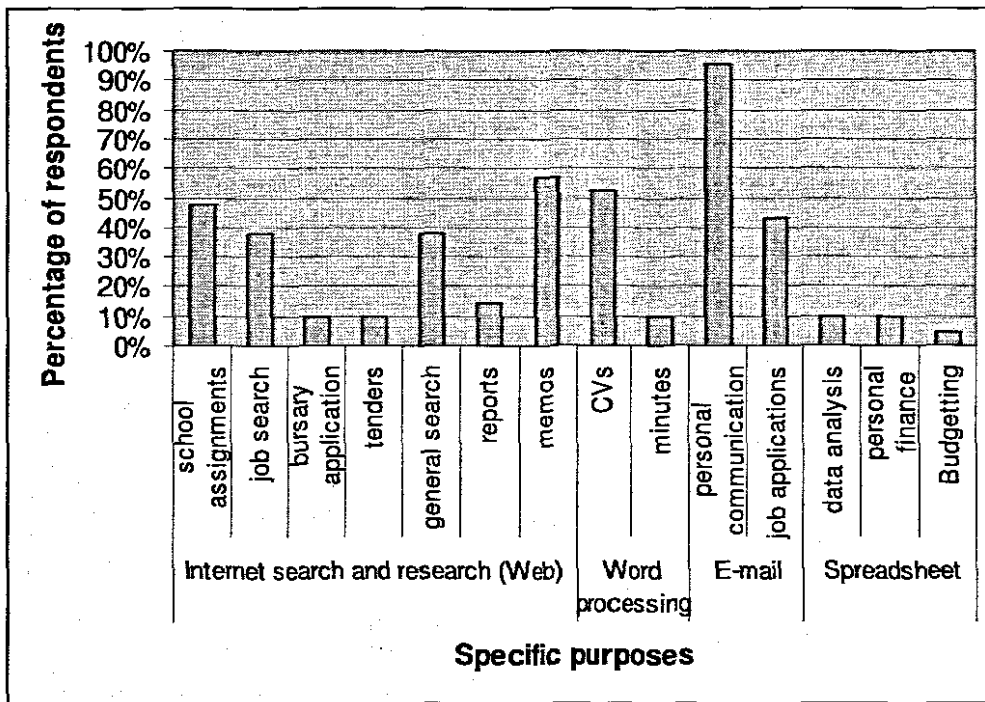
Figure 4.20: Specific purposes of using the facility at Vanrhysdorp.

The first e-community forum member interviewed mentioned that the community perceived the centre as a place for computer training. However, from the interview it was established that the users that come to the centre use the computers for accessing the Internet for information, do email, and the younger users, especially the school kids come to search for information on school project. One e-community forum member said that there were a few users who used the facility to acquire support information, such as finances for their small business. The interviews revealed that a few matriculants use the computers for applying for university admissions and bursaries.

The interview with a second community forum member showed that some community members utilised the government portal to access tender information, and the unemployed use it to search for job advertisement. An

example of a business owner, who uses the facility for the purpose of his estate business, was established.

The estate agent identified, during an interview revealed that the free access to the Internet at the centre encouraged him to start the estate business. He uses the facility to place pictures of properties for sale on the website of another real estate agency in Cape Town. Other critical service he uses is e-mail for business communications. Though the estate agent has a computer, fixed line and a mobile phone; he uses the computer to create word documents and spreadsheet for keeping his accounts. The fixed line is strictly use for making and receiving calls, and uses the mobile more when he is out of office. He also claimed he uses mobile phone to check his account balances sometimes before committing to a business transaction.

4.5.6.5 Opportunities and benefits to community/small business
In this community opportunities have been identified that can be beneficial to small businesses and some benefits are evident. The responses (see Table 4.12) to the first open-ended question on the questionnaire showed that:

- 52% of the respondents which are likely unemployed, benefited from the facility through access to online job advertisement.
- 10% have benefit through access to government tender online.
- 19% of respondents think the benefit is the closeness to ICT to the community brought about by the access centre.
- 19% of respondents claimed that community has experience upliftment from the project.
- 48% of respondents see the benefit as the opportunity to be computer literate.
- 14% of respondents are benefiting from free and easy access to government information.
- 10% of respondents see the benefit coming from their ability to be exposed to other communities outside their own, and 33% are

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benefiting from the exposure to enormous information the Internet offers.

	type of comments	% of respondents
Opportunities/benefits	Platform to access to job advertisement	52
	Access to/apply for government tender.	10
	ICT close to community	19
	Community upliftment	19
	ICT competency/skills	48
	Free and easy access to government information	14
	knowledge of outside communities	10
	Availability of enormous information	33

Table 4.12: The benefits of using the Cape Gateway access centre/e-commerce in Vanrynsdorp.

The interviews with the e-community forum revealed that they have an understanding of what opportunities the facility can provide small business owners and the community in general. Specifically, one e-community forum member mentioned that community members are engaged in arts and crafts and believe having a website can promote the activities of these entrepreneurs. They confirm that there is information on the government portal that can lead small business owners to information on how to start a business, draw up a business plan and secure funding. A small business owner was said to have benefited from using the centre, when he secured a government contract to paint a facility in Vredendal.

However, the one small business owner that realised these opportunities, claimed that he has benefited immensely from the free access to Internet at the centre to start and promote his estate business. He said another benefit was the ability to display his properties to prospective customers outside Vanrhynsdorp. Though he has not sold any property yet through the Internet,

he believes when he does, it will be at a higher value than he would have gotten from a local buyer. What fascinates him most was he realised that he could advertise, for nearly next to no cost using the Internet.

4.5.6.6 Barriers and constraints

As with the other communities, this community also had some barriers, challenges and constraints that are stopping them from having access and benefiting from the Cape gateway access project and ICTs in general.

The second open-ended question revealed interesting issues the users are contending with within their community. Table 4.13 showed that a few respondents (10%) stated that the government portal is not frequently updated and 67% of respondents said that the computers and the Internet are slow respectively. 24% of respondents stated that there is poor support response when there is any breakdown and a few (10%) think the computers are inadequate, as a result they feel discourage to use the facility. The funding towards the project is inadequate was the comment of 19% of the respondents; 24% of respondents stated that the 45minutes allocated for access was not enough for them to do any substantial work on the computer in most times; 38% of respondents said that they lack the adequate training and skills to use the computer and Internet properly; and 29% of respondents said government is not forth coming with its promises on the project. The final responses to this question showed that 24% of the respondents are still grasping with clear understanding of the project.

	Type of comments	% of respondents
	Outdated portal information	10
	Slow computers	67
	Slow internet connection	67
Barriers and constraints	Poor support services	24
	Inadequate facility	10
	Low funding of project	19
	Limited access time	24
	In adequate training/skills	38
	Unfulfilled promises	29
	Lack of awareness	24

Table 4.13: Barriers to access and use of the Cape Gateway access facility/ecommerce technologies at Vanrhysdorp.

The interaction with the e-community forum members re-echoed some of the barriers and concerns raised by the survey respondents. The interview with the first e-community forum member revealed that at the start of the project, they had initial problems with the youngsters who were using the computers for games. The forum members were able to talk most of them to use the computer for more productive things. However, when the researcher sort to know further what barriers and challenges are militating against the community members to access and benefit form the centre, the interviews with the e-community forum members showed that:

- Most community members are not aware of the benefits that using the Internet at the access centre can provide them, most especially small business owners.
- Even among the e-community forum members, some have not grasped the objective of the project two years down the road, hence cannot explain it to other community members.

- Not many older users are patronising the facility. A further major problem is that older users are afraid of computers and that discourages them to use it.

- Language makes some users sceptical about coming to the centre, and other users feel incapacitated to access beyond sites that are in Afrikaans.

- The forum needs a website, but they are not able to have it because they need help from Cel, which is not forth coming. They particularly need the website to promote community members that are in painting, arts and crafts, and most importantly to showcase the biggest plant nursery in Western Cape.

One e-community forum member said that some community members feel the centre is far from their residence and therefore they do not go there, even though it is actually just 15 minutes walk away.

The estate agent interviewed said that though he has a computer and fixed line in his office, he cannot afford to have Internet because of the high cost of access charge. Moreover he said he just started his real estate business.

4.5.6.7 Opinion on improving the project activities

The respondents had varying opinions (see Table 4.14) such as:
- Providing users more time on the computers as against the 45minutes, was suggest by 62% of respondents.

- 19% of respondents said for them to get the adequate support at the centre, government need to hire paid managers for the centre.

- 48% of respondents think the e-community forum members' need more training, to enable them provide the necessary support services to users.

- Majority of respondents (71%) stated that better and more computers will improve the quality of services being provided.

- 43% of respondents said that if a more formal training is organised for users it will improve their participation and use of ICT.

Improvement/additional services	Type of comment	% of respondents
	Extend access time	62
	Need for paid managers	19
	More training for e-community forum members	48
	Faster and more computers	71
	Formal training sessions	43

Table 4:14: Suggestions to improve access to ICTs and services within the community.

4.6 Summary

This chapter described the situation of the six different communities, as summarised in Table 4.15. The interviews and survey revealed interesting activities and ways the communities are using the project facilities (and other e-commerce related technologies). The study further revealed that most of the population in the project communities has access to fixed telephone at home, public phone services and mobile phones as means for communication, apart from the computers provided at the centres. However, there is no significant small business development from using the Cape Gateway access facilities or e-commerce, but there are potentials which can be further pursued.

The subsequent chapter discusses the findings in this chapter with occasional references to literature. This is purposely to describe the findings in relation to obtainable situations globally.

Location (Community)	Context	Facilities	Demography	Activity	Opportunities	Barriers	View of project
Bitterfontein (Westpoint)	Pop: 903 Rural, sheep farming, granite	5 PCs in Municipal library	M/F 60%/40% High school education only 87% unemployed	E-Mail Information search Internet banking	Job seeking Access to govt info Computer literacy Business planning	PC reliability Lack of support Skills deficiency Slow connection Language problems Opening hours	Need to extend hours and move the centre closer to the community
Elim	Pop: 3000 Rural, Moravian, agriculture	20 PCs, printer, server in school	*Note 1*	E-Mail Information search Tendering for govt contracts	Advertising thatching business Optimistic!	Demonstrating benefits Lack of support	Need to separate from the school – hours are limited
George (Cornville)	Pop: 5000 Poor urban in proximity to city Some industry employment	20 PCs, printer, server in school Wireless to local ISP *Note 2*	Majority unemployed	Tuberculosis Skilling street kids Career guidance Tendering for govt contracts *Note 3*	Services to retirees and grant seekers	*Note 2*	Need to set up dedicated room away from school activities Intention to set up second centre if successful
Oudtshoorn (Bongolethu)	Pop: 3500 Poor urban in proximity to large town	5 PCs, printer, server in Municipal library	M/F 71%/29% Mostly high school, a minority have tertiary education 57% unemployed	Two entrepreneurs (ICT services, township tours) Information search E-Mail Word processing (letters and CVs) Tendering for govt contracts School assignments & gaming (when not supervised)	Business planning School learners' access to ICT Better information Free communication hub	Slow connection Problems with open source software Lack of support Opening hours	More training needed Involve community in future developments Put in full time managers

Location (Community)	Context	Facilities	Demography	Activity	Opportunities	Barriers	View of project
Struisbaai (Bua)	Pop: 2000 472 users Some 29% have own PCs	5 PCs, printer, server in Municipal library	M/F 47%/53% 30% have diploma or degree	One small business started E-Mail Information search Internet banking School assignments	Seeking jobs online Information for fishermen (licences, weather) Access government information Info for health professional Poverty is reduced High level of optimism	Slow connection Old computers Low skill levels, limited knowledge of Internet usage Fear of technology Poverty	Update the software Skills development needed Faster equipment and access Focus on real needs and benefits
Vanrhynsdorp	Pop: 3000 300 users Only 10% have own PCs	5 PCs, printer, server in multi-purpose community centre	M/F 52%/48% 30% have diploma Largely unemployed	One real estate business started E-Mail Information search Spreadsheets Word processing (letters and CVs)	Applying for bursaries Job seeking Tendering for govt contracts Upliftment is real Access government information Networking with other communities	Literacy problems Portal is not updated frequently Slow connection Old computers Poor support Language issues	Skills training needed Longer access times Clear up understanding of the project Need help creating own web site Move closer to community

Notes:

1. Because of language difficulties, no reliable data was obtained on demographics

2. Not yet operational at the time of the study

3. Intentions only – see Note 2

Table 4.15: Summary of the findings of the study.

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Chapter Five

Analysis and Discussions

5. Introduction

This chapter is to explore the findings from the previous chapter in a different way, using occasional reference to literature to provide a structure for the discussion; but principally with reference to the research questions. This leads to significant refinement to the conceptual framework (figure 2.11), thereby providing a fulsome framework, to which to draw conclusions.

To achieve the above, the following broad headings are adopted to analyse and discuss findings as it relates to addressing the main research question:

- **Available e-commerce technologies and usage**: Interviewees and respondents described their view of the current infrastructure and what they are doing with it.
- **Opportunity and benefits of using e-commerce**: Interviewees and respondents described in what potential ways the project has benefit them, such as through providing access to appropriate technologies that can enable small business development and improving community values.
- **Community influences**: Interviewees and respondents identified factors at the community and personal level that could inhibit the benefits of using the access centres.
- **Conceptual framework**: The findings revealed that the conceptual framework based loosely on literature needs further additions to make it more relevant to the circumstances of these communities.

5.1 Available e-commerce technologies and usage

This section addresses he research question "What e-commerce technologies are appropriate and available for small businesses in rural communities?" The question seeks to identify what e-commerce technologies are appropriate and available for small business owners in rural communities. The Interview with the Project Manager clearly showed that the main focus of the project is not only to provide technology, but to provide the appropriate environment and technology tools that could aid the communities to access information for the purpose of development.

As mentioned in literature review, Egan, Clancy and O'Toole (2003:142) note that in most instances small businesses are more concerned about, promoting their businesses and exchanging information with partners and customers; and will prefer to use basic technologies such as mobile phone, internet (WWW), and e-mail to achieve that. This research found that these technologies are also the tools that small businesses are using for small business development in the communities. Mobile phone, email and the Internet provides a cheap and fast method of connecting small businesses with their current and prospective clients. This makes these technologies an attractive option, and each is discussed in turn in the paragraphs that follow.

5.1.1 Mobile phone

The interviews and surveys showed that there is a significant penetration and ownership of mobile phones (average 83%) within the five of the six communities. This is significantly higher than the national average of 41% (ITU, 2005b). The result agrees with a study conducted in 2003, by the City of Cape Town and PGWC. The study shows that there is a high penetration of mobile phones in the Western Cape, which was estimated at one mobile phone to 2.2 inhabitants. Again the high penetration of mobile phone is perhaps not surprising, as small business owners and community members use it to keep in touch with clients and family. More interesting, the high penetration of mobile phones is also driven by its extensive use for massaging (SMS).

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This is an indication that, because most people in the communities have access to basic ICT like mobile phones, most are also *de facto* potential candidates for e-commerce adoption. It only remains to be seen whether they consider that to be interesting and useful to them. Moreover, many recent reports have shown that Africa has the fastest growing mobile users in the world (Fink & Kenny, 2003:17). Mobile phones, as argued in chapter two could be considered an appropriate technology for small business owners in the six communities, due to its significant spread.

Innovative ways abound for small business owners and artisans to use mobile phones for e-commerce activities. A study conducted by Vodafone (2004) found that in Kwa Kgapane community in South Africa job seekers used their mobile phones for seeking employment. The large percentage (64%) of the unemployed discovered within the six communities could use this as a cue.

When probed on whether small business owners use mobile phones in promoting and engaging in business, most of them agree that mobile phones are very important. An interesting comment was made by EN1 in Vanrhynsdorp when he said that;

> "... I cannot imagine not having mobile phone; I would
> be missing a lot of business calls especially when I am
> away from office."

Despite the potential use of mobile phones for different purposes, the community representatives and business owners interviewed do not generally use mobile phones beyond making and receiving calls. A small business owner in Vanrhynsdorp said that;

> "...sometimes I do a quick check of my account
> balances with mobile phone, before I commit to some
> financial transactions."

This comment signifies that the small business owner is engaged in some form of B2C e-commerce, though he might not be aware of that. It is a

value-added service to his business, as he is able to make business decision with the aid of an e-commerce tool.

The community members and particularly small business owners within the six communities, should not view mobile phone as tool for making calls only, but also as a tool for engaging in e-commerce such as making and receiving credit card payments (Southwood, 2004) and advertisement, for example using iFind 34600[1] powered by SABC[2] mobile. More importantly, ICT projects like Cape gateway access, should utilised mobile phone as a strategic appropriate e-commerce tool to deliver services to rural communities in a faster and cheaper way. Botha, *et al.* (2004:164); Heeks and Duncombe (2001); and Vodafone (2004) in separate studies have demonstrated that mobile phone provides small businesses benefits such as:

- Save time
- Save cost
- Access to international coverage and use
- Reduced travelling
- Faster and improved communications
- Increased efficiency
- Available to clients at all times
- Contact with the office at all times
- Place orders on the job

These opportunities and benefits of using mobile phones extensively for business purposes can be introduce to small business owners within the six communities.

5.1.2 E-mail

When e-community forum members (ECMs) were asked what ICTs most users regularly use at the access centres, they indicated e-mail. This assertion was confirmed by the 90% of respondents of the survey, though they use the e-mail mostly for personal communication rather than

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[1] iFIND 34600 is a mobile information directory service
[2] South African Broadcasting Corporation

business communication. It however proves that e-mail is one of the most used and most useful e-commerce applications. Similarly, the small business owners said that since they discovered that e-mail is a quick and cheap communication method they now use it regularly for their business communication. Molla (2004) said using e-mail by small business owners is an advantage to access and communicate with customers/other businesses that are ready to conduct business electronically.

The level of use and adoption of e-commerce by small business owners within the communities should follow a progression pattern. This argued Cloete, Courtney and Fintz (2002:3), has to start with entry-level technologies, from which more sophisticated e-commerce activities can be developed (see Figure 5.1). The proponents of leapfrogging into technology might argue that rural communities and small business therein, need not go through the staged ladder; however the circumstance in these communities shows otherwise.

Full fledged e-commerce
(includes all transactional elements & CRM[3])

Transactional technology
(interactive catalogues, shopping cart, secure payments and tracking)

Entry level Technology
(E-mail, static website & EDI)
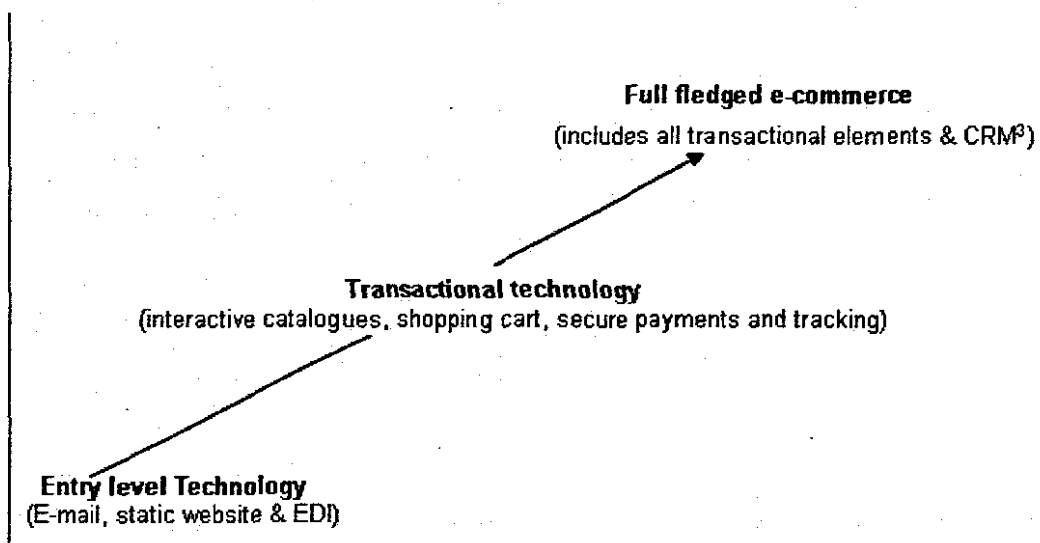
Figure 5.1: E-commerce adoption ladder (**Source**: Cloete, Courtney & Fintz, 2002:3)

The few small business owners identified within the communities are using email, static website, and mobile phones at the entry level. A small business owner in Oudtshoorn has moved a step further on the ladder, with the integration of a shopping cart on his website. The ability to do that

by this one small business owner was because of his prior background training in information technology. In effect users, especially adult ones, using the Cape Gateway access facility it is a likely path to knowledge of what ICTs hold and for the small business owners it points to the direction of using e-commerce for business development.

Along the lines of using email as appropriate technology, this research found within the communities that:

- Most business owners are at the entry level of the e-commerce adoption ladder, with the exception of one at Oudtshoorn that has moved a step further

- For non-business owners they use e-mail for personal communication, however the unemployed among them use it to respond to job advertisement

- Using e-mail for communication is considerably cheaper than other communication tools.

- School learners have use e-mail to participate in global competitions; an example was relayed in Oudsthoorn.

The usage of email within the communities demonstrates further that, using e-mail is a starting point for the use of e-commerce by small businesses, which can improve their communication and information sharing capabilities. It shows also that e-mail as a medium for communication, can help external communication in either B2B or B2C context and reduce transaction cost.

5.1.2 Internet and computers

In a study Pigato (2001:36), found that small businesses use computers and Internet in varying ways. Amongst small businesses it was found, that far less use the Internet for disseminating information because they lack access to it. Therefore, the Cape Gateway access project being a carefully targeted ICT project for the development of rural communities could be a solution. The central computer and Internet access the centre provides is a

good approach at addressing the problems inherent with lack of access to computers and Internet.

For small businesses owners that cannot afford to acquire their own computer facility and have Internet link, a public ICT infrastructure such as the Cape Gateway access is immensely beneficial. It provides the infrastructure that small businesses and community members use for activities such as job seeking, conducting school assignments, and networking with other communities outside their own and for business development. For example, the small business owner, who runs the computer and web hosting services in Oudtshoorn will find it difficult and increasingly impossible to compete without other similar businesses without access to the computers and Internet at the centre.

An important objective of the PGWC to provide the access centres is to enable citizens and businesses to access government services online, via a portal (see Figure 5.0). Painstakingly though, the computers and access to the Internet at the centres has brought the communities closer to government and provide opportunity to narrow the continuous digital divide between urban and rural communities.

Findings revealed that community members and small business owners agree that the centres are partially addressing their need for access to computers and Internet. It is partial, because the current number of computers at some centres is inadequate and the Internet is slow, making it fairly impossible to use the Internet for serious work. However, it was found that most of the job seekers in the communities access the portal for jobs and a few entrepreneurs access mostly government tender information.

Esselar and Miller (2001) said that if technology access is provided through either public access facilities or multipurpose centres to primary and high school learners in rural communities it will create a "networked

society-ready" population. This eventually will accelerate and broaden the emergence of a knowledge-based community, and encourage e-commerce use. In this study there is relatively few evidence of small businesses initiated as a result of access to the facilities, or being dependent on them. However the younger ones who constitute 36% of the users at the different centres use the facility for either school work or playing games. This is not entirely negative; many computer and life skills are developed through gaming, although the exact nature of the games involved might be worthy of a further study.

It is however evident (from the findings of this study) that the ability and interest in using the Internet for business is related to the educational level of the user or business owner – clearly pre-requisites include an adequate education that makes it possible to judge the needs and benefits of use. This correlation between usage and education is recurring: users of online banking facilities also have higher qualifications.
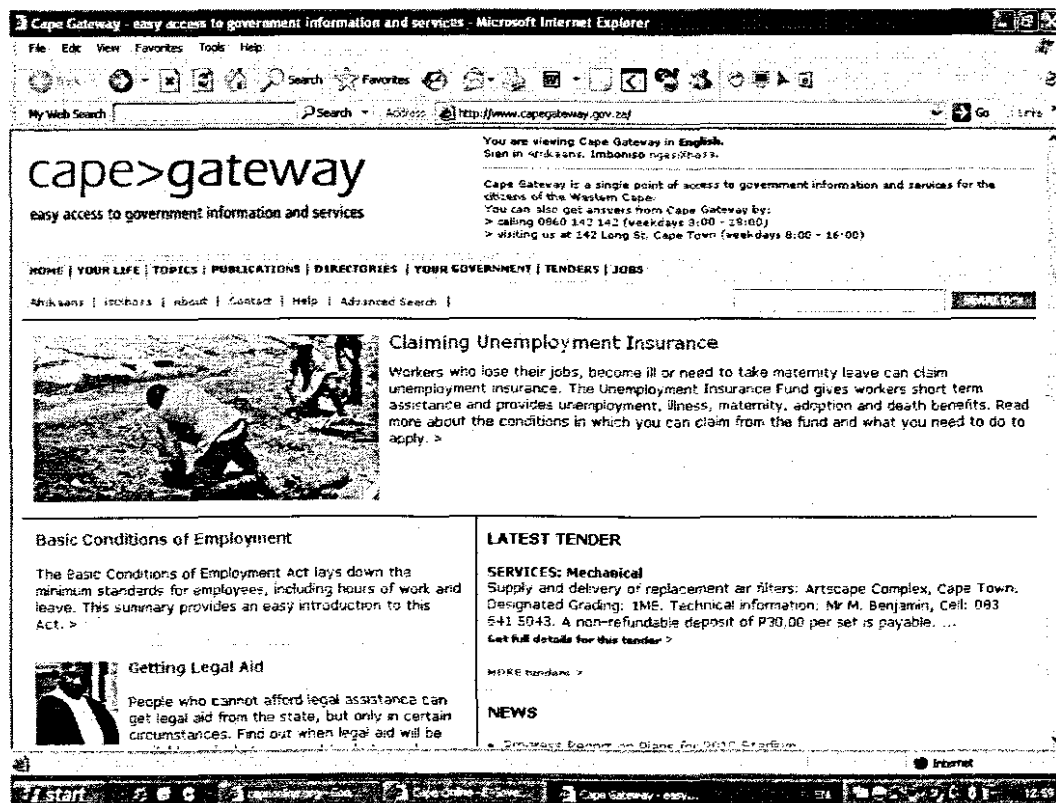
Figure 5.0: Cape gateway government portal (Source: ww.capegateway.gove.za)

5.2 Opportunity and benefits e-commerce

This section discusses the findings from the six communities, revealing the opportunities and benefits that appropriate e-commerce technology offers small businesses in rural communities. This addresses the second research question that seeks to know "What are the benefits of appropriate e-commerce technology to SMMEs in rural communities generally."

ICTs offer significant opportunities to people and small businesses in developing countries (Fink & Kenny, 2003:21) as follows:

- For individuals it offers the opportunity to access learning materials, job opportunities and platform for skills development, and

- for small businesses it offers the opportunity for business development in areas such as market expansion, business growth, low cost of operation, access to external markets and job creation.

This research has revealed that the six communities like other similar communities in developing countries (Rao, 2003:48), need to be motivated and provided opportunity by government and other support agencies to access ICTs, especially appropriate ones. Therefore, the development of the Cape Gateway access project by the PGWC demonstrates the tangible benefits of using ICT, in particular to reduce poverty and create economic opportunities.

The literature in chapter two mentioned that access and use of e-commerce by rural communities or small business owners could likely provide the following opportunities and benefits:

- Market expansion
- Business development
- Low cost of operations
- Job creation
- Infomediaries

To some extent these were evident in the communities. A similar research, however mentioned that the type of e-commerce benefits to small

businesses in rural communities vary by type of business (Papandrea & Wade, 200:10).

5.2.1 Market expansion

The study discovered that the few small business owners that are using some form of e-commerce in their business agree it provides advantages. They said the Internet offers them the means to effectively advertise their business and expose it to markets outside their locality, this provides a tremendous opportunity and benefit. These were justified by the following statements:

EN1 in Oudtshoorn when he mentioned;

> "... I realised through the Internet I can have a website that will tell people in other parts of the world about the township tour business I run here, actually I have received e-mails from people as far as Netherlands, telling me what a great thing I am doing."

EN1 Van Rhynsdorp;

> "... one of the reasons I started this Real Estate business is because I saw through the Internet I can advertise properties, and people from Cape Town and other parts of South Africa can buy property here in Vanrhynsdorp through me."

The value here for these entrepreneurs is the exposure brought to their business and the possibility to attract unlikely clients. The small business owner in Vanrhysdorp shared this view when he said;

> "Because of the Internet, I had interest from potential buyers from outside Vanrhynsdorp..."

5.2.2 Business development

The small business owners interviewed indicated that the free computer time and Internet access provided at the Cape gateway access centres had motivated them to start their own business. They shared this view as follows:

EN1 Oudtshoorn;

"...I was unemployed and using the facility here, I now have my computer sales, maintenance and website development business. I maintain the e-commerce site from the facility here and it is possible for me because the computer and Internet are free."

EN1 Struisbaai;

"...I started providing computers repair services and Internet connection using mobile phones when I started accessing free Internet at the library. Though I now have connection in my house, I still come here to use the facility. But, I still don't have my website yet."

The effect of the access centre on some existing small business owners in the community is beginning to manifest. The small business owners are realising that through the use of the centre and access to technology such as the Internet, their businesses can benefit. This notion is reinforced by the statement made by ECM1 in Elim;

"... one of the community member that runs a small thatching business has approached the e-community forum, he said he wants to have a website, now that there is an ICT facility within our community."

Other opportunities relating to small business revealed in the interviews with the e-community forum members revealed that entrepreneurs that use the access centres believe it has benefits. However, the benefits are not substantial as envisaged and the rate of using the access centres for business is quiet slow. Perhaps the rate of new business start-up in communities must be compared with start-ups *not* related to the Cape Gateway project, however, and a specific study of all business start-ups, based on new business registrations, would be interesting if it enquired of the role of the Internet in facilitating new business activity

However, the time lag for benefits to accrue could possibly span many years (Pigato (2001:4). But the enthusiasm of the e-community forum

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members that things will change is encouraging. This was reinforced by the e-community forum member ECM2 in Elim who states that;

> *"ICTs are changing lives around the world, and we here in Elim hope that through this ICT project the lives of our people will change."*

Some e-community forum members and small business owners believe that provision of financial assistance is important to business development within their communities. Other important areas that can lend support to small development are through government initiatives such as the "RED Door", "Library Business Corner", and "Cape Gateway Access" project. However aggregating these initiatives is important, as it being done now. The importance of aggregating the services offered by these initiatives revealed that some community members were accessing information on how to start a business and prepare business plans.

Furthermore, government support for small business such as providing interest free loans or incentives, for instance the offer by government of R1,000.00 (www.capegateway.gov.za/1000X1000.htm) to entrepreneurs in rural communities to start business is encouraging, in addition to providing access to appropriate technology.

5.2.3 Low cost of operations

A number of survey respondents, small business owners and e-community forum members agree that ICT had provided a cheap and faster way to communicate. An emphatic example of reduction in cost of operations was the case of the fishermen in Struisbaai that use the facility to access Internet to renew their fishing license; the ECM2 interviewed said;

> *"... we saved the fishermen collectively about R100,000.00, to fill their license application online for free at the centre."*

A portion of the survey respondents claimed that using the centre to access government information online had cut travel cost to government offices. To support these findings, Stavrou, May and Benjamin (2000) say

that the low cost access e-commerce provides can reduce the difficulties rural entrepreneurs are facing.

5.2.4 Job creation

The unemployed respondents were seen to be benefiting from access to the jobs advertised online and making job application. The government portal provides the platform for the community members to access employment opportunities. The ECM1 in Struisbaai understood the opportunity that ICTs offer in creating jobs when she said;

> "...I told the school learners that they don't have to continually be fishermen like their fathers, I told them learning how to use computers provides them better opportunity and choice of good jobs in the future."

A particular example of contribution to creating job was narrated by the ECM2 in Vanrhynsdorp as he said;

> "... a small business owner was awarded a painting contract; from a tender he applied for on the government portal and he hired a number of community members to work with on the project."

Unfortunately, this is a rare occurrence and possibly an isolated one, Stavrou *et. al* (2000) said however this could make a crucial difference by providing casual employment to marginalised communities and possibly access to broad based economic growth.

However, respondents in all the communities affirmed that the facility provides them the opportunity to learn about ICT and use it more effectively – a potential factor in gaining useful employment. Therefore, as the use of e-commerce permeates the communities as a result, their circumstances will improve.

5.2.4 Infomediaries

The findings did not reveal heavy reliance on infomediaries by the small business owners. However, there was example of two small business owners in Vanrhynsdorp and Oudtshoorn that were using intermediaries to

promote their business online. The small estate business owner at Vanrhynsdorp uses the website of a major estate agency in Cape Town to display his property, whereas the small township tour entrepreneur in Oudtshoorn relies on the tourism info website for now. Despite the slow and little use of infomediaries, small business owners should know that using intermediaries could address some of the barriers they experience with using e-commerce. Peters (2003) said small businesses within rural communities need trusted intermediaries to act as facilitators and provide support towards integration of e-commerce in their business.

5.2.5 Additional benefits
Other benefits not evidenced in the literature emerged. For example, a common benefit that most respondents in all the communities mentioned was the opportunity to learn about ICT and use it more effectively. Access to the huge information database available on the Internet and the ability to know about other communities outside South Africa was seen as useful.

A very interesting discovery was made in Struisbaai, when ECM2 there said;

> "... this centre has been very beneficial for the fishermen, I look up the weather report on the Internet every day and post it on the harbour notice board for the fishermen, before they set sail especially during the high season."

The key message that emerged from above discourse shows that benefits can be gained from using simple e-commerce technologies as long as the appropriate technology is available and used. However, this can only be guaranteed when ICT infrastructure is adequate, access support is available, and the actual benefits are evident and understood by the community members.

5.3 Community influences
The study revealed a number of similar but critical barriers which impede rural community's access to and use of ICTs and e-commerce, as

highlighted in the literature in chapter two. This limits the number of users or business owners within a community who might otherwise adopt or use the centres and e-commerce technologies.

5.3.1 Lack of awareness and skills

In some communities people are not very clear what benefits the Cape Gateway access centres offer. For instance, ECM1 in Van Rhynsdorp stated that;

> "Even among us the e-community forum members, some of us are not clear what this project is all about. This makes it more difficult for us to explain to the community. Though we know ICTs have substantial benefit."

Though there is an agreement among the interviewees that ICTs have benefits, they cannot place their hands on exactly how this translates to addressing the economic predicament of the communities. In all the communities there is an agreement that the requisite knowledge and skills to use computers are limited, though most of the respondents have had some basic education. This makes it more difficult for community members to comprehend how they can use computers to develop or improve their business. The following comment offered by three e-community forum members and one small business owner is typical:

ECM1 Elim;

> "Our community just know about computers now, and most of them don't know how to use them. That is why our first priority to promote this project and ICTs is to train them."

ECM2 Oudtshoorn;

> "You see our community is poor and before now we don't have access to computers. So we have to start

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by first teaching the users how to use the computers.
Though there are few that know how to use it."

ECM1 Struisbaai;

"This community is a fishing community, and most
think they should rather learn how to fish than learn
computers. But we are trying to change that by
teaching them to use the computers, especially the
younger ones."

EN2 Oudtshoorn;

"I know ICTs can help my business especially to
expose what I am doing through website, but I don't
know how to create the website myself."

The barrier of low education level and lack of ICTs skills could likely be a
factor that affects the ability of the community members to understand, to
a greater extent how e-commerce can benefit them and their businesses.

5.3.2 Telecommunication infrastructure
Telecommunications was discovered to be another concern within the
communities. The situation that these communities found themselves in
the apartheid era has greatly impacted on them, even until now. For
instance in George, been one of the major city in Western Cape the
Conville community does not have access to ADSL services provided by
Telkom.

To support the claim above the ECM1 there stated that;

"One of the major reasons why our own project site is
starting later than the other five is because the Cel
has been trying to find a suitable way to connect us to
Internet. We have also tried to contact Telkom but I
was informed that our telecommunication box does
not support ADSL. But I know this is available in the
city centre. Therefore Cel finally resolved to connect
us via wireless to a local ISP. But we are hoping the
situation will be resolved soon."

Similarly, a small business owner in Oudtshoorn said;

> "... for my kind of business I will need an ADSL
> connection at home... and worst the Telkom box here
> in Bongulethu cannot even support ADSL
> connection."

A similar situation emerged in Struisbaai, as ECM2 depicted the situation as follows:

> "To get a telephone connection here can take you as
> long as one to two years. Therefore it becomes
> difficult to get it for internet access. So it is not a
> priority for small businesses to think of it for their
> business."

These situations are clearly a deterrent for the community to think beyond there current situation, and consider ICT as probable tool for small business development.

5.3.3 Cost and limited income

Other barriers discovered within the communities include the high cost of telecommunication services and poverty. The case of poverty was of great concerned to the communities. From the interviews there were repeated comments to highlight this situation as follows:

ECM2 Van Rhynsdorp;

> "The community here in Van Rhynsdorp has a lot of
> unemployed people, how we can change that is a
> major problem. We are hoping ICTs can be used to
> help."

ECM1 Struisbaai;

> "Among the fishermen here who form the bulk of the
> community, there is poverty, because the fish they
> catch cannot take them through, especially during off
> seasons."

For a few community members that see ICTs as a catalyst for developing small business and improving their current businesses, cost was an issue. They were concerned that they cannot afford the cost of Telkom connection. They had the following explanations to offer:

EN1 Van Rhynsdorp;

> "I go to the centre to use the Internet to check my emails and transact my business, because I cannot afford the cost [myself], it is too expensive, even though I have a computer and telephone in my office as you can see."

EN1 Oudtshoorn;

> "I am virtually here [at the centre] all day, because I cannot afford to have an office or Internet connection at home."

ECM2 Bitterfontein;

> "Most of us don't have computers at home, because we cannot afford to buy one."

EN1 Struisbaai;

> "The cost of telephone and mobile calls is high, so I use the public phone to make calls and use mostly my mobile phone to receive calls."

In essence, the high cost of services that are available is a problem, especially for small start-up businesses and a poor community like the ones in question. Respondents were aware that Telkom costs are amongst the highest in the world, and they do not understand why this should be so.

5.3.4 Language barrier

The communities were mostly Afrikaans speaking. Though a substantial effort has been made by the originators of the Cape gateway access project to prepare project information materials and the portal in three languages (Afrikaans, English, and Xhosa) to accommodate the

communities, there was noticeable discomfort as most other information and material the communities had to access or use outside the portal was in English. For instance in Van Rhynsdorp and Struisbaai the following were mentioned:

EN1 Van Rhynsdorp;

> "... we have asked that all materials send to us are translated in Afrikaans. One problem is that the Project Manager speaks English, most times it is difficult to understand some of the things he is trying to convey."

EN1 Struisbaai;

> "... because most of the material on the Internet is in English we are having difficulty teaching people some things, most especially the older users, but we have fewer problems with the younger ones.

The issue of language remains very critical to the adoption and use of the Internet especially amongst the non-English speaking countries.

5.3.5 Minimal support

The third open ended question on the questionnaire "In your opinion what do want the Provincial Government to add to the existing project services to facilitate small business development?", and similar questions asked during the interview were not only to confirm what immediate improvements to the project are needed; but also to seek from the responses other challenges confronting the community. Some lessons coming from the findings showed that there is a problem of lack of support for users, because the volunteering management strategy of the centres by the e-community forum members is not working properly.

Further, the finding revealed that substantial time is needed to be spent in engaging the communities in knowing exactly how ICTs can fit in their activities. Showing that e-commerce is an enabler of economic activities could resolve the problem e-community forum members are facing trying

to convince the community to use the centres. Studies have shown that the consequences of late/no consultations between project executors and beneficiaries (for example PGWC and the six communities) could lead to delay in the progress of a project, or in some instances complete failure.

The situation with the Cape Gateway access showed that, though there were consultations with some stakeholders in the design of the project (bridges.org, 2003); there was no substantial evidence that the communities of the six pilots were consulted at the design stages. This is why, almost two years into the project schedule the communities and Cei are re-examining how this project can best benefit the communities. Interestingly, the communities are currently coming up with plans of their own that they hope will make ICT beneficial to them. Most of them consider training to be the first priority, followed by a plan on how small businesses will be engaged in some form of e-commerce.

Most e-community forum members argue that their plans can only be successful if they have more government support and support from as many sources as possible. That government does not fulfil its promises (even on the current project, as argued by some e-community forum members) is not encouraging. This means government has to live up to its mandate of providing the enabling and support environment, so that the communities, most especially small businesses, can access and use e-commerce to enhance the economy. However, on the part of the government efforts are being made in providing as much support and encouragement. The, at least once a month meeting of the Project Manager and the communities is a good starting point.

5.3.6 Technology difference at the centres
This study noticed other issues that are likely to affect the proper and smooth utilisation of the access centres within these communities. Regarding connectivity, it was noticed that different methods were adopted to connect the communities to the Internet. Five sites (Bitterfontein, Elim, Struisbaai, Oudtshoorn, and Vanrhynsdorp) are connected to the Internet

via a Telkom leased line, whereas George is connected via wireless radio through a local ISP. The connection at most of the locations is generally slow and often breaks down, the response time for repair and maintenance by support staff is generally long. This means a centre is usually disconnected for several weeks, discouraging the community to visit and use the centre as referred by ECM2 in Bitterfontein in the following statement:

> "... as you [the researcher] can see our connection has been down for two weeks, and we have reported but we are still waiting for someone to come from Cape Town to restore the connection."

In George and Elim the centres were provided with computers and Internet connection through the Khanya project. In this partnership the Internet access bill during school hours is paid for by Khanya, and Cel takes responsibility of Internet bills after school hours. However, in Elim an agreement on how to control and monitor Internet access time hasn't been reached yet; consequently, this is affecting the community's regular access to the Internet.

The computers differ in numbers and types at the different locations. In Bitterfontein, Oudtshoorn and Struisbaai Pentium I computers (without hard drives) were supplied by the Cel. The users at these locations complained that the computers are extremely slow, affecting their excitement to use the computers. The computers at Elim, George and Vanrhynsdorp are relatively new and faster. The project adopted free and open source software (FOSS) as the software platform to run the computers. However, staff and users in Bitterfontein, Oudtshoorn, and Struisbaai mentioned that the platform is not flexible to use. Therefore, Cel is changing to Microsoft platform to make all the project sites use a uniform software platform. Towards that PGWC has entered into partnership with Microsoft for the provision of free licences for the computers at all the sites. This as the Project Manager states will solve the

problem of non-uniformity and the difficulties the users claim they face with using the FOSS platform.

5.3.7 Access centre location

It is good to utilise existing facilities to site ICT projects. However, this research noticed that facilities like schools and libraries are not effective, because they tend to be restrictive (with rules of use) and inconvenient (at a distance, and hours of opening). This alone could discourage an entrepreneur to use the centre or rely on it for his/her ICT needs, as time is of essence in business.

This problem was prominent in Bitterfonfontein and Vanrhynsdorp. The ECM1 in Bitterfontein stated that;

> "... the distance of 2.5km of this centre from our homes, is one problem that is stopping many people from coming to use the centre."

In Vanrhynsdorp the ECM2 said;

> "... People are complaining that the centre is far from them, but I see that as an excuse."

Respondents in Oudtshoorn were critical of the time the library opens for them to use the facility and the arbitrary times the place closes.

The project manager also alluded to the fact that libraries and schools are not convenient places to locate access centres. He actually stated that if he had the option, the centre would be cited either in MPCC or a location designated specifically for that.

5.4 Extended conceptual framework

A simple conceptual framework developed earlier indicated by figure 2.11 on page 53 was based loosely on a reading of the literature. The framework proposed got the research started and now, with the results at hand, the conceptual model is revisited and used to position many of the issues that have been revealed. The framework conceptualised the

elements that constitute the interaction of rural communities with e-commerce for small business development: the rural community, the aspiring entrepreneurs and e-commerce technologies that they might choose to use. It showed that there are opportunities, benefits and barriers associated to accessing and using e-commerce by the rural communities and small businesses. These were presented in chapter four and discussed here in chapter five. Further, the framework presented an arrangement of ideas that shows that if appropriate technology is available, rural communities can take advantage of it for small business development and economic development.

However, access to and use of appropriate technology alone cannot provide the adequate enablement to use e-commerce by the communities. This is especially true in the context of an economic development driven ICT project such as the Cape gateway access.

The findings made were captured and developed as an extended conceptual framework (see Figure 5.3). The findings reveal that initial consultations are necessary with the stakeholder communities before the start of the project. The project from the inception should have clear aim at integrating ICT into the mainstream livelihood of the community. This is demonstrable through integrating e-commerce into the activities of small businesses. The resultant effect will likely be increased economic activity, this way the community will be empowered and integrated further into the mainstream economic activities of the country.
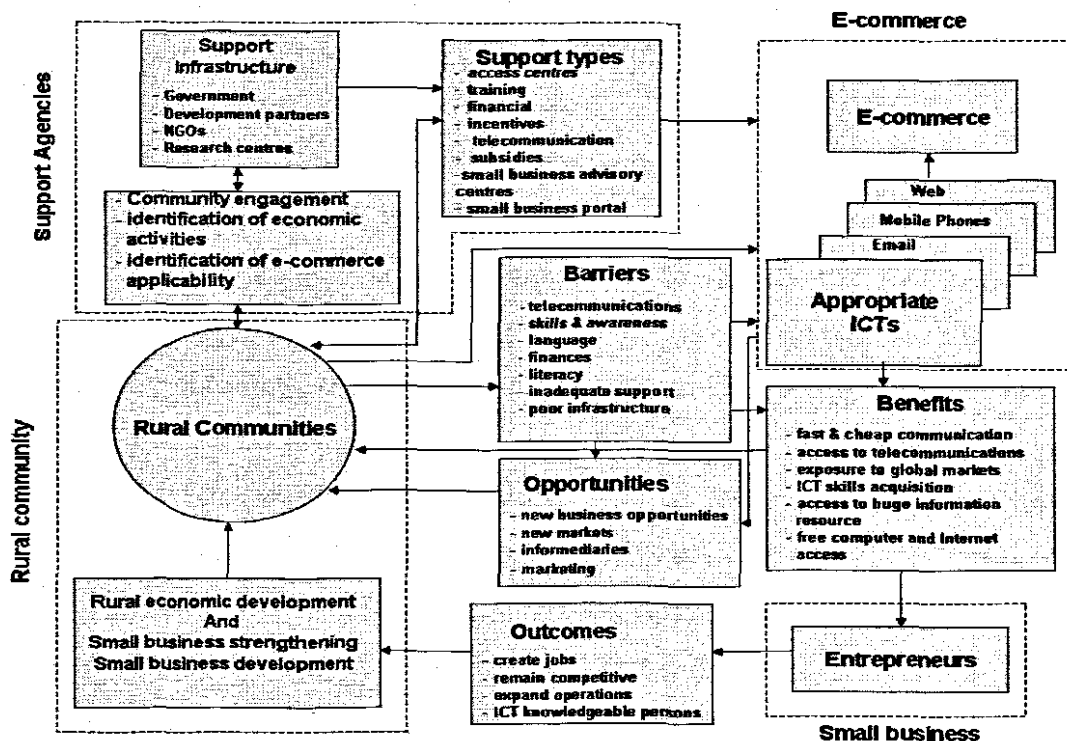
Figure 5.3: The extended conceptual framework for rural community use of e-commerce for small business development based on findings.

The framework further describes the flow of activities and the impact appropriate e-commerce technology has on small business development and access to e-commerce. Stavrou *et. al* (2000) mention that e-commerce can impact the income diversification activities of rural communities. Therefore, the availability of appropriate technology provides the potential for more income generation opportunities for the six communities and similar others in South Africa. These are listed as follows:

- The impact of using appropriate e-commerce technology on small businesses at this stage is basically the potential role and benefits its use have on the lives of rural and previously disadvantaged communities of *Western Cape.*

- The few entrepreneurs discovered in Oudtshoorn, Struisbaai and Vanrhynsdorp are utilising the resources available to them to transform their economic base. For example;

- o The township tour entrepreneur in Oudtshoorn, is benefiting from the exposure provided to his business, through online advertisement.
- o The ICT entrepreneur in Oudtshoorn is able to provide web services as a result of having access to the centre.
- o The Computer entrepreneur at Struisbaai can service his customers through having access to resources on the Internet and providing innovative Internet access to his clients at home.
- o The individual at Vanrhynsdorp could start an estate business, for having access to the Internet.
- Furthermore, the access to and using appropriate technology could provide a new medium to transact business, as it was found that electronic banking had alleviate the problem of non-banking facility in some communities.

The impact of having an access centre and using appropriate technology however is not that simple for the communities. It was found that the community are not able to clearly articulate the benefits of ICTs, let alone that of e-commerce. Moreover, the impact of e-commerce on these communities can manifest only when the necessary support structures (access centres, small business support agencies and finances) are available and easily accessible.

The extended framework further exposes dependencies that must be addressed between appropriate technology and development in the six rural communities investigated such as:
- Providing access to and use of appropriate e-commerce technology can address the disproportionate information access inherent with rural communities.
- Provision of access could provide platform for economic growth for these communities that have been excluded from economic participation by design.

- The communities can use appropriate e-commerce technology to leapfrog and participate in the knowledge economy. This can provide the needed developmental opportunity for rural communities.

However, getting all these done could be painful, slow and problematic.

5. 5 Summary

The discussions of the finding has reveal that the initial conceptual framework simple as it may look is a lot more complicated than we thought it is. From the extended conceptual framework it is observed that for rural communities to use e-commerce a lot more issues are involved. This has reveal that the availability and use of appropriate e-commerce technologies extend beyond provision of access, but also to provision of support outside technology and multi-stakeholder approach to addressing the economic situation of rural communities. The findings provide the basis for the recommendations and conclusions drawn in the subsequent chapter.

Chapter Six

Recommendations and Conclusions

6. Introduction

This chapter provides recommendations and comments that could help in addressing the challenges observed from the interaction with the six communities as reported and discussed in chapters four and five respectively. The comments here are likely to provide a more practical approach to ICT project such as the Cape Gateway access project that tries to address the economic need of rural communities

It has been observed that most governments in developing countries have realised that the advent of ICT, and in particular the potential of using it to connect remote communities, provide an opportunity to develop small businesses, and do business across boundaries. Consequently, most governments have introduced projects to create the climate for e-commerce and facilitate its growth and use within rural communities. Though the task is Herculean, it still remains important to integrate rural communities to the mainstream economy of their countries.

6.1 Recommendations

The success of ICT projects and use of e-commerce within rural communities can be guaranteed, when improvements are made to ICT infrastructure, access to relevant information and the appropriate support and technologies are available. However, this as we have discovered is a lot more difficult than we thought it would be. Therefore, what this research tries to offer here does not guarantee anything; it merely deals with some of the observed problems, thereby possibly revealing even more problems.

In that respect the following recommendations could help:

- In the specific area of providing platform for rural communities and small businesses to use e-commerce, a comprehensive, collective approach is very necessary. In South Africa where different

agencies and government departments implement ICT initiatives targeted at rural and previously disadvantaged communities, it is important that managers are encouraged to work collectively. This will ensure coordination and targeted approach to the needs of the communities.

- There should be more consultation and engagement with communities in the development, running and evaluation of developmental ICT projects.

- Improvements on the Cape Gateway access project are necessary to encourage communities to use ICT as a means to small business development.

- As the findings revealed the communities are anxious about learning to use ICTs, government should consider providing funds specifically for training of access facility managers and even users.

- If rural communities are going to use e-commerce, then they will require easy and cheap access to ICT. They also will require constant and guaranteed support.

6.1.1 Training and skills development

- Among the initiatives to stimulate rural communities and more importantly for small businesses owners to use ICT as a prelude to adopting e-commerce, greater interest and attention should be paid to communities' and entrepreneurs' needs in terms of training and skills development. As ICT projects are developed to address imbalances and inadequacies of rural communities, a clear strategy to address the skills needs should form part of the project objectives.

6.1.2 Funding

- The level of poverty in rural communities will impede the acquisition of ICTs, therefore provision of subsidies and incentives are important for small business owners within these communities.

- If the government of Western Cape wants to ensure access to its services and programmes by majority of its citizens in rural communities without Internet, then government should continue to

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provide funding to keep open and maintain the current access centres. Furthermore funds need to be available for new centres, facility upgrades and support.

6.1.3 Access and content

- This study confirmed that there are still many rural and previously disadvantaged communities without high-speed access (ADSL for example) to Internet, the government should compel Telkom to make this service available to these communities, especially for small business owners. Otherwise, government should provide subsidies for private sector extension of broad-band access in rural communities.

- A critical need of disadvantaged communities to improve themselves is the type of technology available, so project such as the cape access should consider and include appropriate technology from inception.

- Language is a critical issue in the investigated communities, beyond the current efforts to provide government information in the three major languages (English, Afrikaans and Xhosa) in Western Cape, localization efforts that can lead to broader access to the Internet should be supported.

6.1.4 Intermediaries

- Arts, crafts and tourisms are attractive to markets outside South Africa. The entrepreneurs engaged in these vocations in the communities do not have the capacity to take the risk associated with transactions. Therefore, either government or NGOs[3] should aggregate these businesses and shoulder the responsibility of handling their transaction. This will also be an opportunity for the entrepreneurs to access and participate globally, safely and cheaper.

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[3] Non-governmental Organisations

Finally, it is recommended that as government prepares for the next phase of this project, a substantial shift in focus should be made towards ensuring demonstrable benefits of ICT and in particular e-commerce, especially for the purpose of small business development.

6.2 Conclusions

The research is significant for both policy makers and practitioners. From the literature discussed in chapter two, it is revealed that e-commerce holds potential for supporting the development of small businesses within rural communities, it is possible however when support is provided for potential and existing entrepreneurs, appropriate technologies are deployed and used. Unconsciously, within these communities members are engaged in some form of e-commerce ranging from B2B, B2C and G2C[4], though not as significant as one would have envisaged. Further, e-commerce is still in its infancy and even highly developed communities are still learning to get the best out of it (Daniel & Wilson, 2002:333). Most users of ICTs at the centres are at the very starting point, with learning how to use computers as the most preoccupation.

Most importantly, the research revealed some strategic developmental potential of ICTs and e-commerce supported small businesses in the rural communities investigated. For rural communities ICTs offers the opportunity to:

- acquire skills,
- access jobs outside the immediate environment,
- diversification of economic activities,
- job creation, and
- poverty reduction.

For small businesses the developmental opportunities are:

- access to more and unsuspected clients
- more revenue,
- savings through reduce cost of operation, and
- cheap advertisement media.

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[4] Government to Citizen

Despite these opportunities, it is necessary for rural communities to use the existing centres and technologies available for the development of small businesses. It is encouraging also to see that the communities consider the centres important, and they are utilising it for different purposes.

In concluding this research, it is important to point out the following:

- The success of using e-commerce by the six communities for small business development within the Cape Gateway access project context can be positioned within the framework of the "information management body of knowledge" (IMBOK) (Bytheway, 2004).
  - o Knowledge area 1: Information technology: the appropriate technology has to be introduced and understood.
  - o Knowledge area 2: Information systems: The right applications have to be available on the technology
  - o Knowledge area 3: Business processes: the issues of managing the technology, applications and users have to be properly addressed.
  - o Knowledge area 4: Business benefits: the opportunities and benefits associated and accruing from the project and use of it, should be evident.
  - o Knowledge area 5: Business strategy: finally, the method and way the project are conceived and executed has to consultative and engaging of the communities.
- The understanding and addressing the needs of rural communities and small businesses within them, through ICTs could be complicated and painstaking. The Maslow hierarchy of needs (Chapman, 2002) could play an important role here. Providing basic life needs and other necessary needs contained in the hierarchy is important and critical for a successful adoption of ICTs by the community and e-commerce by small businesses.

Perhaps the final observation has to be that the cost of telecommunications services in South Africa is really incompatible with the

needs of small businesses. Although it is not a feature of this study, any comparison of local wealth and the cost of telecommunications in different countries around the world would reveal that South African is doing itself no favours at all. The sooner competition comes in a way that stimulates improve quality of service and much more economical tariffs, the better will be the prospects for these and other communities to become economically empowered and self reliant.

6.3 Limitations

A limitation to this study is its small and biased sample size and external validity. It is presumed that a larger sample could provide greater stability of the findings. A research conducted within similar communities (Chigona, 2006:89) using the Rogers' Diffusion of Innovations (DoI), came up with similar findings. This provides reliability to the findings of this study.

In order to fill up the information gaps in this research, a longer time and the using of theoretical frameworks to investigate the communities, in a follow up study will be desirable.

6.4 Future research

This research could be extended and replicated in similar communities, especially to monitor and compare regions in South Africa. Other interesting areas for research are to find out from rural communities and small businesses within it, how secure and comfortable are they with e-commerce; investigate more in-depth strategies to practical steps of implementing e-commerce and finding out how important is it to support rural communities, and what is needed to ensure business and economic development. Moreover, the framework developed and described in this study could contribute to future research by providing guide to a comprehensive understanding of the environment in which rural communities can develop, the possibility of changing business environment for small businesses and the likely requirements that may be placed on them by using e-commerce.

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Appendix A

Interview guides and transcripts

1. Interview for Project Manager and e-Community forum members

G1: Introductions and purpose of interviews

G3: The time the project started

G4: The life of the project

G5: The thinking behind the setting up of the project

G6: Benefits of the project to communities

G7: Special cases among the six pilots

G8: Small business of the facility

G9: Challenges

G10: Future directions

2. Interview Guide for Small business owners

G1: Introductions and purpose of interview

G2: Start of the project

G3: Knowledge of the project

G4: Other alternatives to project

G5: Ownership of e-commerce technologies

G6: Online activities involve with

G6: Role of project in the running and development of business

G7: Benefits of project and e-commerce technologies to business

G8: Challenges

G9: Wishes and aspirations

PM – Cape Town Interview transcript

Interviewer: Daniel Inusa Yakmut – I
Interviewee: Project Manager – PM
Location: Cape Town
Time duration: 56 minutes
Date: 14 June 2006

I: Could you explain the origins, the aim and objectives and the structure of the Cape gateway initiative.

PM: It is actually the Cape access Initiative; It started out of a white paper that was brought out in 2000. And that white paper amongst other things wanted to see how we can actually modernise our communities providing them with access to technology, so that at the end of the day they are able to actually use information and modern tools to respond to poverty. There was a policy and strategy that was put forward that is cape online strategy, by the department of economic development and tourism at that it was the department of economic affairs, tourism and agriculture. And the Centre for e-Innovation at that time was called, economic and e-government, under the Directorship of Dr. Harold Wesso, who is now with the DoC. Then cape online had a number of initiatives amongst which is cape access, which is also cape gateway. But cape access did not, it really didn't start, but we concentrated on cape gateway. Then we were invited for World Summit on Information Society (WSIS), in Geneva, I went there and I looked at a number of initiatives when I was there and I realise that, although there were a number of good things that were happening, nobody is thinking about actually how do you begin to get the communities to own the process.

How do you get the communities to basically, how do you integrate technology into their everyday life. I didn't see it happening anyway, there were a number of countries that were with very interesting projects. But I still didn't get the sense that people understood very clearly how to do that and even I didn't understand. So we came back and we sat down and we actually brainstorm around, how do we actually do something like this and cape access was born. Cape access was born in 2003/2004. Well we said that look I mean our initial our initial strategy was to go to libraries, but I did a number of researches and I realised that libraries are not necessarily the right centres. Everybody thinks they are, I can tell you they not. They are in certain instances, but in most instances there is a lot of problems, particularly in context of South Africa where dealing with the issues of accountability, as to who is actually accountable to who, the librarians are their moral is down, they don't want to basically take on extra project on top what they are doing. Because you there is a lot of politics. So but we start in the libraries, and we realised that we have go actually a step further, we actually have to use the strategy that we say, wherever there is a potential public centre we will go. If there is a school with a computer we will go in, if there is a multi-purpose centre with computers we will go in, and we will use the infrastructure that is sitting there, to actually drive the project. And hence we now have schools; we have multi-purpose centres and libraries. It is a hybrid of centres that we are using. The biggest determination for us is that we do not go into an area unless the community wants us to. Secondly is that we will go into a community, and use centres that are close to the community, so the special location of these areas is closer to where the communities are leaving is very critical. That is why you find out that one of our centres in Bitterfontein, we are changing location, we are moving into a different place. It is actually going to move three times, so it is going to move into a better environment, but then eventually it will move into a multi-purpose centre which is basically part of the community.

What we do is just provide the management of the e-community forums, at the centre but they still run the place. They do everything there.

I: Two questions came into mind, first can you explain better the difference between cape access and cape gateway? And the second question, what was the process of involving the community?

PM: I have got a model, I have developed a model for cape access by the way, I am busy, I took it to national government and they liked it, and it is a uniquely South African access model and I will be developing it a little bit further. But, there is a model existing, and that model basically talks about a number of things how do you get the communities to get involved, the participation of the community, that model talks about that. But I mean, cape gateway is around providing, using particular technologies to actually provide access to government. So Cape gateway will be a walking centre, that you see downstairs, it will be a call centre that is sitting at foreshore at the bottom;, Dialogue communications we outsourced that to them, the number is 060 142142. And then there is the portal, the website that is cape gateway. The centres now form part of cape access. Cape gateway and Cape access they are linked, so what we do is we take Cape gateway to the people using the cape access model.

I: So can we call Cape gateway access?

PM: But I mean you will confuse people. So the communities will use the Cape gateway tools amongst other things to create that knowledge. So we put the portal into cape access centre. And we will let the community know about the cape gateway call centre. Cape access is more than that is about now we have got technology, how do we then drive it into the community. So it is standing on two particular legs, one it is standing on technology infrastructure (your networks, the productivity tools) and the tangible things you can touch. The second leg is that is standing on is the community leg; where you put in the e-community forum, training and all that kind of things. So cape access is around using ICTs to link up developmental initiatives of the community, I always say this to people it is not about technology. I am actually very much passionate about that. It is about using appropriate technologies, but linking into a broader structure, a broader community fabric. And that is to say how do we ensure that people in that community can derive various services in an easier fashion; knowing that technology is good in ensuring that these things are accessible. But another thing is that we also want to bring government closer to the people and cape access is a tool for that also. So cape gateway is actually sitting here in Cape Town, and cape access takes it out to the people; where government becomes closer and closer to the people.

PM: What was your second question?

I: Second how do you make the community involved in the process?

PM: It depends on the structure you put in, for use what we did was, we have to understand from the beginning, that we don't understand anything with regards to the communities. The reasons why these things are failing are basically because people go in with this mentality that they know what the communities need, they don't; and that is my approach. I go in as a student, just like there are doings who want to be aware what we are doing, I am actually going to be a student trying to understand what are the issues, in that communities, when I go in I let the community drive the process. They tell me what is it that I need to do to ensure that these projects actually work. So I sit down, I listen to them, I go into their houses, I

sit and I have coffee with them; and I operate at a very individual level; that is how you get the community, once you are there, then you can actually identify keep community structures, that would actually have the attention of the community and you get them to mobilise on your behalf. You get buy-in from them but you don't make those structures the end in themselves. You need those structures to get the grassroots, so they will setup of the meetings, they will get the communities excited about the meetings e.t.c, but you talk directly with the community. And the community decides whether they want this or not, if they don't want it I don't go in there. I go to another place. Because for me what becomes important is that the community has to understand that I went I leave and I come to Cape Town they have to look after the project, if they don't look after it I take my things and I leave, just so simple as that. That is my determination factor. So, the other thing is that I work very hard on gaining the trust of the community; which is very important, because what you find is that, we all make a lot of promises to the communities and we don't follow through. The most difficult thing about this project is that when I say I am going to do something, I better do it. And it is hard sometimes; this project is one of the most difficult projects I know. So, you get the community participation through getting their trust, them promising that they are going to look after it, by making sure all the time you get them involved. The structure of the e-community forum are set in such a way they got an executive level which is just made of people who are elected by the community to be part of the-community forums. We have got Chairperson all the way to Secretary, administrator e.t.c. and the non-executive layer is actually made of institutions, so it is not made of individuals. That is very important.

I: Can you explain in more detail the structure of the e-community forum?

PM: The structure of the e-community forum is divided into two layers, whatever organisations are in that community we mobilise them to be part, so they become members of the e-community forums. But of course not everybody in those organisations will be members of the e-community forums. So what we do, we then say to the chairperson you go and elect or appoint two people, who will represent your interest on the e-community forum. Then they elect two people in their organisation, and those people are the representative of the member organisation and they will sit on the e-community forums. They will meet with the e-community forums once in a quarter. But you need to understand that all of these things we still trying to put in them place. So what you saw when you went to those communities is not complete, the e-community forums are not complete. They don't have second layers; this year is going to be about that. This year is going to be about setting of those second layers, about providing those centres with appropriate furnishings, so that they become proper centres, about overhauling the technology at the centres, about putting together governing structures. So what you are going to find now is that those e-community forums are now going to be providing us with monthly reports. They are now busy working on their strategic documents that they are going to hand in by the 1st of July. So this year is about cementing those things, this is about focusing on high impact projects, so that at the end of the day we can actually justify our existence. And we can justify the existence of the e-community forums; justify the existence of the e-centres; so this year about that.

I: So you're in the consolidation stage?

PM: Yes, we are consolidating. So when we roll out we roll out the model and whether we roll out 19 or 55 whatever centres, we already have the proper governance structures to basically roll out this. Now in rolling out is not going to take as long as it did with the current six, since we have to start from the scratch. We didn't have most ideas. I didn't do best practices, whatever, I just sat down I thought

I said how do I do this and I just did it, I don't know how I did it. So it came from the strategies that I was making as I was going I was learning and we documenting these things down so that at the end of the day we can make corrections. So that how you actually set these things up.

I: How do the e-community forums managed themselves? Is it their business or do you give them guidelines like meet them once a month?

PM: I meet with them once a month.

I: And what of the forum themselves?

PM: They meet twice.

I: They meet to discuss what?

PM: Once the meet by themselves and they have a meeting they report about progress about what they have done. And I provide coaching, guidance and advice around how best to do things. But basically the Chairperson reports to me with regards to the progress, because they have to link up to our strategies, they have to link up to the provincial government strategy around information society , they have to link to national government strategy. So we have to link up to all the strategies. So I have to consistently report how they are linking up. But they own the project; they make all the management decisions around the centres.

I: So are you saying they did which services are provided?

PM: they decide who does in, how long. They have access at the systems. At the moment each centre will appointing two people to facilitate on a full time basis. They basically own everything I just provide them with the management I manage the e-community forums. But they manage the centres themselves.

I: How then, do government services fit in all these?

PM: While, I mean our e-government tools like the portal is the one going to drive that will drive that aggressively. Because, basically if you go into a centre the first thing you will see is our portal. We would basically use that portal as the core of the kind of information we need to deliver. But then the portal will be a sort of a gateway to a broader cyberspace environment. So the communities in order for them to gain access to the cyberspace they have go through the e-government tools that we have. They have to go through the portal and then they can have access to other things. We believe that people don't only live for government they have other things, so we need to nice enough to provide them with that. But other than that, we also going to market our call centre and ensure that if they don't to use the centres; they may use telephone to link up government. They can come in use the centre that we have. That is the call centre, to gain access to this big thing call government. Also of course the call centres, they have call centre agents who will then be able to take them in to the other areas of government. And then the walking centres are also the physical space where government does business. And the e-centres will also, act as walking centres as well. So they will sort of double up in terms also serving as information desk.

I: We talk about the locations, about the aims, could you tell me more about the infrastructure that these centres have at the moment.

PM: At the moment these centres have got computers, that range form five to about 21 depending on whether they are schools, they have got slightly more computers. They are link to wireless connection network and others are linked digitech technology, but they all connect as private network of the city of Cape Town. The libraries all linked to Smart Cape, the schools were connected via wireless and MPC are linked via local radio. But what we doing at the moment we trying to develop a uniform connection; so we are going to engage with SITA or CenTech if we can provide connections to all our centres. They have got access to, the libraries have open source running on their machines, we are getting out of that.

I: Can you explain why, it is a hot topic?

PM: It is. For me as well again it is a topic that I try and avoid as much as possible. It is not a debate for me, the debate between propriety or open source has got nothing to with me. I don't care, for me the determining factor is whether or not it is user friendly for people. What are people used to, most of the issues I have to deal with. Of course an open source environment with the smart cape technology. It is incredible user unfriendly, people don't understand it. But we thought, no man people are complaining we have to move to an environment where people, feel actually comfortable. So we form partnership with Microsoft, so they are giving us free licenses, and they coveting our OS to a propriety one. So they are giving us a number of things they are partnering with us in terms rolling this thing out. What will happen, the other thing is that the other centres because we also use existing facilities are operating on a Microsoft platform; it also so that in other for us to standardise we have to use same technology across the board. That is the reason why we decided to change, just to standardise. But, I think the important thing is what is important to people, what is user friendly, and then I am not saying that open source does not have a very user friendly environments, I am sure it does. I don't know it and I have got immediate issues to deal with, so those issues I don't want to get into any software debate. So we are moving into Microsoft.

I: So are you saying you are a practitioner not a researcher?

PM: I am a practitioner.

I: And we researchers don't know much about real lives?

PM: I am sure you do. But I am not the kind of person who is going to sit down and research around these things. For me is what works, I get my cues from the communities and I implement what the communities want. They said to me what we want is this, who I am I to say no. I said earlier on that what drives me is not the different research around best practices , what drives me is how can actually make this project to be as user friendly as possible, because the more user friendly you make it the more you are going to get participation. If you come with your things and people don't know about it. Then you are going to have a white elephant sitting around. For me that is what drives me. So yes we are providing them with Microsoft OS, they will be linked to a central server that will be sitting in Cape Town; but each centre will have what we gateway servers. We also implementing a sort like centre management software. That will actually monitor and manage users' patterns, but it will also monitor what people are using the centre for. There was an electronic questionnaire developed which will pop out after a couple of minutes, It will be compulsory for people to complete it. In that questions it also asks questions around how often do you use it the centre, is the software friendly, has the e-community forum been treating you nicely, are you using this to look for jobs, have you gotten value out of this. All of these the questionnaire basically covers. A report will come

out that tell me the value that centre is providing to communities at the moment I can't do that because I don't have facility.

I: You told us about a lot of things you want to this year, you told us about moving from open source to propriety software and from volunteers to full workers.

PM: In a sense they are still remain volunteers, we are just providing them with an allowance.

I: You mean they get some stipend?

PM: Yes.

I: then adding second layer to the e-community forum and anything else?

PM: I think the most important thing, is really to provide governance structures that are going to ensure that the project actually lives up to it's goals. But the other thing, the project is a means to an end. So what we want is this project to be a vehicle for development. So the project has to basically, link up to developmental initiatives, so if social services come up with a programme that will benefit the community, we want to be part of that. We want to provide a facility within which those programmes can actually run. So Information society yes, nice, good, but useless if it doesn't provide any developmental importance to the people. Your project has to be value adding, it is very difficult to link ICT projects to value adding issues in the communities, very difficult. As a computer, cell phone, TV yes you sit there you watch TV, you are able to communicate via telephone, able to do all those kind of things yes. But then what? You are still going to go back to a shack; you are still going to back to an environment where you don't have money. People don't even have money to get airtime. So what I am saying is that yes let's have Cape access, but let us put it together, but let Cape access be a vehicle through which other organisations can develop their communities better. So the Cape access will then focus on this kind of things, form partnerships with different developmental organisations. So it can actually begin to add value and that is what is going to bring development.

I: Are you planning to expand the initiatives, and how many do you want to add?

PM: Our initial plan was to expand this year. But we thought no, it is not the right time, but when we do expand we will start with about twelve centres. This means we are doubling the existing, totalling 18 centres, and we continue doubling as I get more staff working with me. We also need to form relationship with institutions of higher learning because we are going to need help regarding training, around various issues. Where we can get institutions of higher learning to provide us with students, which will want to do some work within these communities. This are kind of partnership we are looking. So that as the students are studying they gain experience as to how this things actually works. But, yes rolling out we will have to, but we cannot roll out further until we can actually show cost, we can actually that these things are succeeding. Once we can show that , then we can roll out.

I: Two questions – Did the e-community forum members had any training?

PM: Ongoing training – meaning that, I do most of the training, at the moment I am actually providing them with some level of project management training. But the thing is that most of the training is on the job is real time training, so when they do something and they don't know how to do it and it is something that we can train

them then we do it. And the trainings are specific to the functions of the e-community forum. We have just done portfolio management workshops. Right now we are rolling out the project management template and we will be training them on how to it. But then there is something that we identify full on project management training is needed, full-on leadership management skills are needed and we are going to provide it. So centres of higher learning as I said we going to approach them, and say can you put together something that you can provide. But also there is an online Microsoft digital learning system that it will be provided to us. To teach users on basic computer training, then it takes them into Internet training and productivity tools. The fourth module will be security. How do you actually secure your system? Then people will write an online test and get accredited.

I: Will this be for e-community forum members or the entire community?

PM: It will be for the community. We will roll out as soon as possible. The e-community forums have gotten training coordinators; who will assist in rolling it out. But they are going to test it first, they are going to go through the course, write the test and get the certification for that. That is another incentive for us also. Once they have all this we are going to roll out further. That is going to be on their strategic plans.

I: So the training was on going, but now you want to make it more formal?

PM: we are now structuring it. We have to look at other training interventions as we move along. But these three has been identified.

I: Do you handle the training centre by centre Or by workshops?
PM: Centre by centre, because it is very expensive to do in workshops.

I: Because one of the thing I am thinking, is there synergy between the centres or what kind exchanges do they have?

PM: One of the things that we are doing at the moment is that we are now developing a website, where they can actually post what they are doing online and we also going to look as well putting out an online discussion board. Where they can actually discuss things online, because again we want them to use ICTs and if they can communicate online that is good. But in the website each e-community forum will publish its monthly report, it will also publish its strategic documents and it will also publish every event that they are doing, they will put it online so that other e-community forum members can learn from what they are doing. But meeting online will be very good. I think eventually from next year, once a month I will have a sort of e-community general meetings. Sometimes when we have workshops the e-community forums that are staying in the same district they meet at workshops. So that is the kind interaction that is taking place.

I: What topic do you usually cover?

PM: it depends on the issues are, for instances the other workshop that we did, you must understand the workshops are practical and particular to what is it that they are doing now. For instance they needed to have a workshop around how to manage portfolios, their portfolios especially that regards their experiences. So the other thing, we continuously link with our strategies as well. But I think we are trying to get away from an environment where you get lectures or got topical issues around Information society, which is not what is about. What it is about is how are we impacting on the community itself, so the workshop will be how do you actually

impact your community kind of. If people want to actually talk about things or they want to cover information about things relating to Information Society, they can at least ask. But our priority will be what I have said earlier. So that at the end of the day these e-community forums become masters of their craft practically. That to us is more important than anything.

I: How many workshops have you done?

PM: we've had about three so far, an introductory workshop – which is to take people through our goals, what we wanted to do, because the basis was broad. The second workshop that we actually had was at ISW – information society week, where we pack them in here in Cape Town. They came and shared ideas with people from other places around the world. And they dealt with issues around the information society. That was an extra-ordinary workshop everyone was there. The third workshop was the plenary session workshop where at the end of last year we actually had a session region by region. The e-community forums had the opportunity sitting with us and together we strategise on the things for this year. Now we had the portfolio management workshop. So basically as and when the need arises we put together training sessions.

I: You talked about rolling out, I want to get out from you what kind of lessons, mistakes and challenges you faced and want to avoid in the next stages?

PM: The model has got about twelve or fourteen lessons learnt and issues. But there are number of things I have learnt, I learnt lessons around special development with regards to how you setup a centre. From the infrastructural point of view there are a lot of lessons that on has learnt around the kind technology that you need to put together. The most that I have learnt about this project is real about people, how do you actually get the communities to own the process; for me that's the most valuable thing that I have learnt. Where do you start, how do you start, who do you talk to, how long does it take, how do you start operating, if you start operating what do you do first. There is a hell number of things that I have learnt, which I think the best is to send you the model, and you just look at it.

I: What are the main services that offered now at the six centres?

PM: At the moment as I said is consolidation. We are still putting together a number of services, we can actually run in those communication centres. But at the moment, the strategies the e-community forums are sending us will provide us with the programmes that we roll out. But that will be in the end of July. At the moment what we are doing is just to provide free access to Internet and e-mail to the communities and they need it. But we try to structure it and manage it better. So the programmes will begin to actually frame the kind of services we could provide. But what we have done so far, as I told you we try to link up to various development initiatives within the community and I know that one the e-community forums ulwazi e-community forum they will be running a career day for the matric students. There will be stalls people will be coming and they will be providing access to available websites that will be appropriate for the matrics when they leave school. Those kind of things, social services we are trying to pilot a project together is call the Job seekers programme; this will be piloted on the west coast. So that we can actually provide people with tools as how to look for a job using ICTs. But I think as well the strategic plan, we are anticipating will be provide us a clear understanding as what is that we need to do. Believe it took two years, for the e-community forums to understand what is that they needed to do first of all. So the two years have been around getting the plan, not only the plan but the e-community forums to get it; that is what our role

is. It is not something that you just do it and you leave. It is painstaking, it is monthly meetings, is getting to coach them. So two years has been about that, and it is about piloting certain services. When the programmes need to be put together and the community needs to know about the existence of the e-community forum. Providing and setting up stalls in the community, and we go into the community and we tell people what is that we trying to do. Those kinds of things, just to get the e-community forums out there. Now is going to be about value added services to people. What other thing we are going to do, moving forward is that we are going to be having evening sessions, where we going to divide the communities into different sectors, different needs and profiles. And then we will hold evening sessions, where we will invite members of the communities to come and we take them through various sites, for instance we invite aspiring entrepreneurs, if there is a need for that to come into the centre one day show them how to tender online. Invite the elderly people show them how to get access to pension information; the reason being that we want to link these centres to the issues that are bedevilling that community as it exists. So we want to say that whatever is happening in Elim, whatever people are struggling with in Elim, that centre should be able to provide solutions for whatever issues that are arising. And the sessions will be around how do you actually provide solutions for the issues that Elim people are dealing with. And if we can do that then we get demand rising. And you get more demand if you can get demand from these communities of course we cannot run out unless we continue.

I: In the moments who are the users of the centre and what do they use it for?

PM: Everyone member of the community, it is a community thing. They use it for various things like Internet and email.

I: Do you think then so far in two years there are some benefits?

PM: I wouldn't say entirely yes. But there are pockets of exceptional benefits in some of the communities. However this falls below expected achievements. But again as I said, when we are able to collate the strategic plans, we hope that more benefits will begin to manifest in the communities.

I: I think that will be it, thank you for your time.

PM: you are welcome.

ECM1 - Elim Interview transcript

Interviewer: Daniel Yakmut Inusa - I
Interviewee: Chairperson - ECM
Time Duration: 30 minutes
Date: 26 April 2006

I: To start with can you me give a background of the project, how Elim was chosen?

ECM: the project started with using the facilities of the primary school where I teach. How Elim was selected I am not too sure. But I must it was a great idea, especially for the upliftment of our community, as people from Khanya came to install the computers.

I: How do you spell K…

ECM: Khanya, means light

I: which language is that?

ECM: I don't know which language is that? But I know it means light

I. Okay

ECM: the school had to contribute certain amount, but don't know what, but the rest Khanya to pay for all the computers and the technology.

I: okay, that is good

I: But what is the e-Innovaton office contribution?

ECM: oh no they trained us to start an e-community forum and the e-community is to see to the different projects that is to be initiated. Actually we decided on our own project, we actually discuss about the needs of the community.

I: Yes, it is important

ECM: we have to worked how to address the need, we actually came up with four beautiful projects. May I can give you one copy.

I: may be this one

ECM: no that one, this different school project. We also made a need analysis.. May be if you like it, you can have it. And we studied all the results.

I: It will great to have it.

ECM: most people where interested in the document, you see.

I: I will be very happy to have it.

ECM: the issues, we decide what the issues were now; all about needs we needed to address. This is actually the forum, you can a have copy. We have actually grown

till today. This one is in Afrikaans. It is the one I wrote to the newspaper. You can actually have it.

I: I will find someone to translate it.

ECM: I actually wrote that to introduce people to the project. This is what, little article I wrote.

I: Yes, okay

ECM: Yes here it is, without the cover.

I: okay

ECM: This is project one, this how we laid our projects out. What are we going to do, this is the activity, the name of the project, what we will do, the centre of e-Innovation will do, and the support we will get from other people. And then implementation. Project two is also there, you can actually study it. I did it in English because I knew everyone will want it. You know the day when we presented this everyone wanted a copy.

I: Whoa, that is good

ECM: we actually came home with only one or two copies left

I: It is looks like you are the only one that did that? I mean Elim.

ECM: Yes, I think our e-community forum was the only one that laid it out like this.

I: Good

ECM: I have given you now lots of study material.

I: yeah, definitely

ECM: will you like the Khanya thing.

I: yes thanks.

I: so I was saying, looking at the issues you raised here, which of course you plan to address them within the project, and I saw that you set up some targets for 2005. Particularly now what have you been able to achieve? That is last year, now we talking about.

ECM: last year we achieve our goal, because we actually decide that the first project we will initiate in 2005, which was equipping the people with basic skills. We felt that it will serve no purpose if people do not know how to use the computer, for us to continue with the next project. They had to learn the basics, how to use the mouse, how to switch on a computer, how to go open up document, save and all that stuff. Yeah we actually completed that one.

I: so how many people have you trained so far?

ECM: yeah we, Oh it is pity the computer is off now. We got a whole database on that. I think we have, I don't have the names here.

I: Any estimate number

ECM: of the people yes, we have quiet a big amount of people.

I: okay it means almost, what are the age group?

ECM: Mmm.. here we go. The age is, they are actually everyone is allow only if they are not at our school. No kids at our school because they do get their normal education and computer training. Only kids at the high school level and the community members.

I: as long as the person is ready to learn?

ECM: we split into this; this is for the project one. But eventually there quiet a lot more people. As you can see there are only 20 computers here. At times we have three sessions per night. We close very late, about 60 people at a time; but all in all I have a 120 registered. Some of them are computer literate so they did not take part in this phase. They are anxiously waiting for us to start online studies project.

I: So but those that have some basic computer literacy have they not been using the computer facility?

ECM: yes they have, some of them not all of them come here regularly to do e-mail, email addresses, surf the internet and find information and so on.

I: What kind of information do they find, mostly?

ECM: Mmm... some people come here to find out about especially the government services. Because we introduce them to the cape gateway portal, they come here to find out how do they apply for grant, how do they find information about pension.

I: grant for what, for business or for what?

ECM: for children,

I: okay, is that social grant?

ECM: yes social grant, we have people come looking for tenders.

I: is that government tenders?

ECM: especially in the transport, yeah actually looking for jobs and stuff like that on the computers.

ECM: Where there any particular people that actually got to know of a job, any one specific?

ECM: not that I know. But I know one guy that uses the computer to look for transport tender to cape town. And wants to be working from here.

I: Okay, but I saw that this place is famous for thatching.

ECM: Yes, this is the most famous town for thatching in South Africa.

I: Yes, I agree I saw that the thatch from far does not look like grass.

I: are people still doing the thatching business?

ECM: yes ..yes, predominantly almost 80% I don't want to go too far, but the majority of our people's income comes from thatching.

I: Okay, how do people find out about them, how do they advertise themselves and things like that?

M: actually there is one guy is part of our project, not part of the e-community forum. A community member he comes here, he is enjoying the privileges here. He actually he plans to create a website, he is a contractor, he got his own small thatching business.

I: here in Elim?

ECM: yeah, he lives close here, people need to know more about him.

I: yeah about it, because when I go to the website of cape gateway much of that was not mentioned. Until now that I am hearing from you.

ECM: but funny enough, that is the problem.

I: okay, but how is he going to create the website. Does he know how to create the website himself? Or he needed support from the e-community forum?

ECM: No, we actually, one of our project is business... small businesses... that is project number three. Technological support for small businesses entrepreneurship and individual development project.

I: okay

ECM: yeah, that is to help, how to develop small businesses, entrepreneurs, farmers and individuals through the use of ICTs, creating websites, marketing, financial management, Internet banking, search for information, e.t.c.

I: That is project three, after one you go to two – which skills, is project two like one, right?

ECM: two is online studies.

I: That means what?

ECM: people will come to study online, study especially those that do not have the means to go to institutions. And they use the computers here, for study and to look bursaries and stuff like that, and information on where they can study.

I: So is the community very happy and receptive of the project?

ECM: oh yes, absolutely, I don't want to say but they are crazy about this. Absolutely, because once we present classes you can't even enter the room, they block the way because they want come in first.

I: Okay

ECM: I have to say please people we cannot go on unless I go into the room. So please give way. They are very reluctant to give way. They run through the garden.

I: Nobody wants to miss out on the opportunity.

ECM: No, they are really.. really; actually I should have taped it on video.

I: How were you able to capture that kind of attention? Is it because the community is small?

ECM: we actually had a marketing campaign also where we spoke to the people. We had meetings in the hall the whole community was invited and we explain to them what the whole project is all about. And they were also invited to the official opening of the centre and the main people spoke to them, for the school teachers we had this function in this beautiful little restaurant here in town, where different speakers introduce them to the project. And we obviously had letters, posters, pamphlets and stuff. So the community was quiet aware of what we are doing.

I: what challenges are you facing now?

ECM: challenges, at the moment our main constraint is financial, but as I said we are just waiting for the centre for e-Innovation, to install the monitoring system. At the moment our school is suffering with finances, we cannot carry the finances on our own. They actually assured us that they will install the monitoring system soon as possible, so that we all can see how many people per day and at what times, so they know exactly what they have to pay. So that is basically all. We have excellent people on our forum. Excellent and very dedicated.

I: What new improvements will you want to see to the project?

ECM: I think if we have more time available for the users this will further help. I hope I have been helpful. We need to see more Government and NGO support in the area of ICT in the community. This will help in no small means to improvement this community and bring up to speed.We have a lot of potentials here.

I: Yes you have, but a few more questions and we will be done. When did the cape gateway started in Elim?

ECM: I think it started, when it was officially launched by the provincial people on the 14th of June, 2005.

I: Do you know the population of people in Elim?

ECM: Let me see, the population is around 3000 or so.

I: And the numbers of users already registered or are using the facility so far?

ECM: round about 150.

I: does that include the ones you mentioned earlier you have trained?

ECM: Yes.

I: Is there mobile signals in the community?

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ECM: Yes, actually a substantial number of the community members have mobile phones.

I: What do they use it for?

ECM: they use it basically for calling friends, relatives and those that have businesses I am sure for business calls also.

I: I think that is it. You been very helpful and receptive, I appreciate the time and support you gave. Thanks.

ECM: It was wonderful talking to you also.

Interviewer: Daniel Inusa Yakmut - I
Interviewee: Enterprenuer – EN1
Location: Oudtshoorn
Time duration: 35 minutes
Date: 17th May, 2006.

I: Thank you Mr. Ashley for accepting to see me. I want to find out what kinds of business are you involved in and what you were doing before now?

EN1: Before I started the business I was just sitting at home, thinking of how to go about the business. But when the Cape access project started I got information from the Librarian that a project was going to start in the community on ICT and I said I will be interested. Then the first meeting of with Refilwe, I was there and I volunteered to be in the e-community forum. I was in the start of it. I also help with the installation of the computers when they brought it here. I was then appointed the administrator for the centre.

I: So what actually is this small business you have now?

EN1: I am into computer repairs, sales and maintenance on computers.

I: Did you receive a formal training on that?

EN1: Yes, I did a diploma with Technikon SA and at the moment I am busy with my B.Sc through UNISA.

I: So you had training at Technikon SA, what actually did you study?

EN1: It is information technology.

I: After the project has started, how has it help you in your business?

EN1: The project helped me a lot, because before that I don't have access to Internet. I don't have e-mail and I did not have marketing source and material. Now I can market myself, I now have my own website that I have created using the facility here; Access to the Internet to retrieve information, and have free hosting for myself. After the free hosting, I upgraded to paid hosting, using search engines, using the resources on the cape gateway website to registered my business as a close corporation.

I: Now that you have your business online, have you attracted any clients?

EN1: Yes, many clients have contacted, this would not have been possible without the website. I have done some businesses through the website.

I: You said you have added website creation and hosting to your business, how much of that have you done?

EN1: Most of the people don't have any idea on how to create a website so I saw this as an opportunity for business and help to my community. So like the current website I am creating, I told the owner that this will help him expose his business far beyond Bongolethu. The most income he will get will come from outside especially

that his business is in tourism. So I told him the web portal will be a source for people to find out about him and contact him.

I: Do you have other clients also, or is this the first one?

EN1: It is the first major client I have, but I have advised many small business owners within the community. And most of them say they are going to think about it. The problem is that they are convince and sure of how it will help them in their business.

I: But how much does it cost to create the websites?

EN1: for the basic website – like 3-page website I offer it free of charge. For more advance website contacting system, ordering system, and everything is R500.00.

I: So what kind of web design tools do you use?

EN1: At home I am using PHP and free software.

I: So do you have computer at home?

EN1: Yes.

I: But do you have Internet access at home?

EN1: No.

I: Why?

EN1: That is why I sit here all day; I do not have money rent an office. And because of cost of the Internet.

I: But if you want to have access at home what kind of access is it possible for you to get?

EN1: For my kind of business I will need to an ADSL connection.

I: Is ADSL available here?

EN1: No, it is not yet available in Bongolethu..

I: But is it available in town?

EN1: Yes it is available.

I: Why is not available here in Bongolethu?

EN1: Because they (Telkom) said the exchange is not yet upgraded to be able to support ADSL service.

I: So you said the project has helped you in your business and has that improved it?

EN1: Yes.

I: So do you have fixed phone line at home?

EN1: Yes I do. But one has to be careful how much of it you use to make calls, because of cost.

I: Let me know from you do you have mobile phone?

EN1: Of course I do have one, who will want to run a business without a mobile phone. That is what I use to keep in constant contact with my clients.

I: Apart from keeping contact with your clients what other things do you use the mobile phone for?

EN1: Actually that is mostly what I do. But I know there are other business activities one can do with mobile phone, but for now I cannot afford expensive phones with a lot of functionalities and my requirement now is making and receiving calls. But I will get there hopefully.

I: So which other younger and small business owners within the community are utilising the centre and Internet?

EN1: I do tell them the benefits of coming here and also of promoting there business on the Internet. I normally use myself as an example. Though some of them are coming around to see how things work.

I: But if they have to start a business and use the facility what kind of business opportunities are available for them?

EN1: There are some, a good example is Thando's tours. But most want to get jobs. But I say to them there are more opportunities now than before to start a small business; because jobs are not easy to come by. And I show to them that the cape access project has provided me with a free platform, which I am able to develop my small business and progress it.

I: What is the name of your business and the website address?

EN1: The business is called Bright Idea Projects 748 cc. and the website address is www.brightideaprojects748.net

I: When did you create the website?

EN1: I created the website in 2005.

I: Do you have some kind of counter on your website to know how many people have visited the site?

EN1: I have a control panel where I check my statistics. Which, is an open source software.

I: Okay, so how many people have visited the website so far?

EN1: Over 1000 as you can see.

I: So among the visitors to your site how many have done business with you and how many are from around Oudtshoorn?

EN1: I have transacted business with more than 75 clients and more than half are from around Oudtshoorn.

I: Did all these clients know about your business through the website?

EN1: Yes, through the website.

I: Are you satisfied so far with the progress that the cape access project and Internet had brought to your business?

EN1: Yes, I am so far. Actually to promote the business further I am listed on Google and Yahoo.

I: Did you pay for that?

EN1: With Google I paid, and there is free and also on Yahoo is for free. So that I can easily be pick and ranked high when people search stuff that relates to my business. And I am also listed with Ananzi and gardenroutes.com I have a link on their site.

I: So what are the challenges you are facing generally?

EN1: Before the project it was how to promote my business, but now a great deal of that has been sorted. But I need support in the area of finances. And the high cost of Internet is stopping me from getting my own connection at home where I am suppose to be running my business from. And here at the centre it is not very convenient because I have be helping other users and the connection is extremely slow for me to be doing any reasonable work. But I must say it is still more than nothing. And if I work at home on my pc it is not possible to upload it on this machine, since it does not support using USB devices. But I am still happy to have the opportunity the centre offers.

I: Any other things?

EN1: No I think that is all.

I: Thank you again.

Appendix B
Questionnaire Sample

Survey to investigate the use of e-commerce by rural communities for small business development
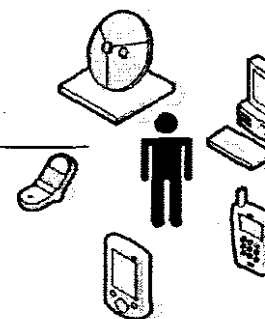
This questionnaire is designed to find out what the current state of e-commerce within the context of the Cape gateway access project in your community. The research intends to find out how the project and other related technologies impacts on you or your business. It is hope that the outcome will assist in improving of the current facility and provide a better design for other similar projects in the future.

It takes about 10 minutes to fill it in, and it might improve your community life. Please do your best to complete all questions, and hand it to the training coordinator at the library or MPCC.

What we will do with the results
First, please be assured individual responses will be kept secure and in complete confidence, and will not be divulged to any third party – not even the managers of this project. They will be destroyed at the conclusion of the survey.
However, the results will be analysed and summarised as an M.Tech thesis, for the benefit of the community, the Provincial Government of the Western Cape and the general public.
The findings will be made available to all interested participants and members of the community.
Finally, the summary of results will be published academically (i.e. in research journals in South Africa and elsewhere), should they merit the attention of researchers and others who are working to improve the economic fortunes of rural communities.

Notes
Please answer questions as an INDIVIDUAL, not on behalf of others.
You are not asked your name, but if you wish to have a copy of the final report sent to you by e-mail, please complete the request box at the end of the questionnaire.
Please attempt to answer all questions. IF you leave any answer we amy not be able to use your questionnaire at all.

Thank you! Do Please contact (below) if you have any questions.

Daniel Yakmut Inusa
M.Tech Research Student
Faculty of Informatics and Design
Cape Penisula University of Technology, Cape Town Campus.
yakmutd@yahoo.com and 072 5211 547.

Confidential

Questionnaire No: [   ]

			c4	
Q1	Please indicate whether you are (Tick one Box)	Male		(1)
		Female		(2)

			c5	
Q2	What is your age? (Tick one Box)	Under 21		(1)
		21 – 30		(2)
		31 – 40		(3)
		41 – 50		(4)
		51 or over		(5)

c6

Q3   Please state where you live: _____
      (community you live in this town)

			c7	
Q4	Please indicate your highest level of educational achievement (Tick one box)	Primary(Grades 1-7)		(1)
		High School (Grades 8-12		(2)
		Vocational		(3)
		Diploma		(4)
		4-yr degree		(5)
		Post Graduate		(6)

			c8	
Q5	Please indicate whether you are (Tick one box)	Employed by other		(1)
		Self- employed		(2)
		Unemployed		(3)

Note: If you own a small business or manage a small business please fill the next section 2. If you are employed or unemployed and use the Cape gateway project facility, please skip to Section 3.

SECTION 2:
If you are self employed, i.e. if you sole manager/owner of a small business please fill this section

Q6   please state type of business: _____

                                                ─   c

Q7   Please state the year in which you started the business

	c15
Q8 Please specify the form of Ownership of the business (Tick one box)	Individually Ownership (1) Family Ownership (2) Joint Ownership (3) Franchise (4)

	c16
Q9 Please describe the size of your business (Tick one box)	Small Scale (<50 employees) (1) Medium Scale (50-254 employees) (2) Micro Scale (1- 20 employees) (3) (Not Applicable) (4)

Q10   Please indicate how many employees you have (if any)   c17

Q11   Please list the main products and/or services your business offers   C18

Products manufactured by your company	Products supplied by Your company	Services offered by Your company

Q12   Please specify the target markets for your business
(Please tick boxes which apply)   c19

(1)	(2)	(3)	(4)	(5)
Local Community	Western Cape	South Africa	Outside African countries	Other Countries

Q13. What information sources do you use?
      (Tick one box for each category)   (1)

Friends and family	c20
Newspaper and magazines	c21
Radio	c22
Television	c23
Government bulletin	c24
Small business support centre	c25
... Other (Please Specify	c26

Q14   How easy is it to obtain good quality information on the following,
not using Cape gateway project facilities?

(Tick one box for each category)   (1)   (2)   (3)   (4)

Information Concerning ...	(1) Easy to Obtain	(2) Not easy to obtain	(3) Not able to Obtain	(4) Don't Know	
Existing Customers					c28
New Local Customers					c29
Export markets					c30
Laws and Regulations					c31
Sources of Finance					c32
Management/Staff Training					c33
New Technology/Equipment					c32
New Staff					c34
Government Information and Tenders					c35
... Other (Please Specify					c36

Q15   How easy is it to obtain good quality information on the following
using Cape gateway project facilities?

(Tick one box for each category)   (1)   (2)   (3)   (4)

Information Concerning ...	(1) Easy to Obtain	(2) Not easy to obtain	(3) Not able to Obtain	(4) Don't Know	
Existing Customers					c37
New Local Customers					c38
Export markets					c39
Laws and Regulations					c40
Sources of Finance					c41
Management/Staff Training					c42
New Technology/Equipment					c43
New Staff					c44
Government Information and Tenders					c45
... Other (Please Specify					c46

Q16   Do you Have access to good quality information to improve your business?   c47
(Please comment)

Q17   Which methods of communication do you find most effective for promoting
your products/services?

(Tick one box for each category)   (1)   (2)   (3)   (4)

	(1) Very Effective	(2) Quite Effective	(3) Not Very Effective	(4) Not Used

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Face to Face Meetings					c49
Mail Shots					c50
Telephone Sales					c51
Magazine Advertising					c52
TV/Radio Advertising					c53
Bill Board Advertising					c54
Web Page Advertising (Internet)					c55
... Other (Please Specify					c56

Q18. Which of the following communication infrastructure do you own?

(Tick one box for each category)

Telephone (fixed line)		c57
Telephone (mobile)		c58
PC		c59
ADSL		c60

Q19   Please indicate how often do you use the following for communicating in your everyday business dealings.

(Tick one box for each category)

	(1) Very Often	(2) Quite Often	(3) Not Very Often	(4) Not At All	
Fax Communication					c61
Telephone (fixed line)					c62
Telephone (mobile)					c63
E-Mail					c64

Q20   How often do you use the following computer-based activities in your business?

(Tick one box for each category)

	(1) Very Often	(2) Quite Often	(3) Not Very Often	(4) Not At All	
Word Processing					d2
Spreadsheet-Based Analysis					d3
Desk Top Publishing					d4
Accessing the Internet					d5
Using E-mail					d6
... Other (Please Specify					d7

Q21   What contribution has the Cape gateway access project made to your community/business?
        (Please comment freely)

Q22   In your opinion what are the biggest problems/constraints which you have observed with the Cape gateway project that prevents you from achieving your business goals?   (Please comment freely)

Q23   In your opinion what do want the Provincial Government to add to the existing project services to facilitate small business development?
        (Please comment freely)

END FOR BUSINESS OWNER – THANK YOU FOR COMPLETING THE QUESTIONNIARE, PLEASE REVISE AND ENSURE THAT YOU HAVE ANSWER ALL   QUESTIONS

Section 3
Please fill this section if you are a worker, student or unemployed and you use the Cape gateway project facility.

Q24. Which of the following communication infrastructure of do you have access to at home/office?

(Tick one box for each category)

Telephone (fixed line)		c56
Telephone (mobile)		c57
PC		c58
None		c59

Q25. if you use the Cape gateway access centre, which of the following computer – based activities do you undertake and for what purpose?

(1)   (2)

	Tick one box for each category	Purpose	
Word Processing			d8
Spreadsheet-Based Analysis			d9
Desk Top Publishing			d10
Online Banking			
Accessing the Internet (search and assignments)			d11
Using E-mail			d12
... Other (Please Specify			d13

Q26. How often do you visit/use the following the Cape gateway access project facilities? (Tick one box)

(1)	(2)	(3)	(4)
Very Often	Quite Often	Not Very Often	Not At All

Q27. What contribution has the Cape gateway access project made to you and your community?
(Please comment freely)

Q28 In your opinion what are the biggest problems/constraints which you have observed with the Cape gateway project?(Please comment freely)

Q29. In your opinion what do want the Provincial Government to add to the existing project services?
        (Please comment freely)

Thank you for completing this questionnaire.

REQUEST BOX

Name:..

E-mail:...