URBAN INEQUALITY AND INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT)

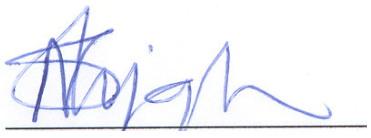
NKATEKO BUBBY SHIPALANA

A research report submitted to the faculty of Engineering and Built Environment, University of the Witwatersrand, Johannesburg in partial fulfilment of a Master of Science Degree in Development Planning.

Johannesburg, 2005

DECLARATION

I declare that this thesis is my own, unaided work. It is being submitted for the Degree of Master of Science in Development Planning in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University



(Signature of candidate)

__28th_____day of_____November_____(year)_____2005___

ABSTRACT

Human societies are commonly faced with the challenge of addressing social inequality, but this challenge is one of the most “contested” arenas of urban planning in South Africa. Parallel high levels of socio-economic and spatial inequalities, a “revolution” that is based on information and communications technologies is exacerbating existing socio-spatial patterns.

However, these ICTs are seen by some as having a dual character, and hence the potential to advance the social and economic well-being of the poor. Developing countries have thus embraced these new technologies as a means of resolving social inequalities.

To what extent do ICTs achieve this? In addition, what role is there for urban planning in ensuring that ICTs resolves social inequality?

DEDICATION

Manana na ndjangu

ACKNOWLEDGEMENTS

I would like to extend my many thanks to my family for all the support I've received from them.
I would also like to thank all my friends for sticking by me
Most importantly, my supervisor, Tanja Winkler, for all the help she's offered me
My lecturers, for all your guidance
Lastly, to all those who I have left out who have, and continue to play an important role in my life

CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF BOXES

1 INTRODUCING ICTs FOR POVERTY ALLEVIATION

1.1 GENERAL BACKGROUND

Human societies are commonly faced with the challenge of addressing social inequality, but this challenge is one of the most “contested” arenas of urban planning in South Africa. In the early 1990s, Lemon (1991) observed that in the post apartheid South Africa, homes will always be apart. Although he argued that segregation would be conducted along lines of socio-economic status rather than race, he assumed that within race inequality would reduce significantly.

Terreblanche (2002) observed that between-race inequality is still evident and the spaces designed through apartheid to segregate races still exist. Hence, does planning build upon the segregated spaces of excluded communities or create entirely new ‘integrated’ spaces. Whereas the latter is difficult to conceive, the integration of marginalized spaces is achievable through new information and communication technologies (ICTs). The research will focus on the use of ICTs as a tool for addressing inequality.

South Africa is straddling the developed and developing world in one nation. The African National Congress (ANC) noted that:

> In South Africa 'two economies' persist in one country. The first is an advanced, sophisticated economy, based on skilled labour, which is becoming more globally competitive. The second is mainly an informal, marginalized and unskilled economy, populated by the unemployed and those unemployable in the formal sector
>
> (ANC National General Council, 2005: 1)

This conflict provides unique problems and opportunities for social action.

Contemporary societies, at least in the “advanced parts of advanced societies” (Graham and Marvin, 1996), are said to be experiencing a

transition that is transforming the material dimensions of life (Castells, 1989, 1996, 1999b; Castells and Hall, 1994; Graham and Marvin, 1996; Schon *et al*, 1999). This transition is transforming the way people live, socialise, work, think, play, shop, die, and so on (Webber, 1963; Bell, 1974; Toffler, 1980; Pascal, 1987; Castells, 1989 and 1996; Sassen, 1991; Mitchell, 1995).

The decline of manufacturing in the 1960s and 1970s and the consequent increase in the importance of the service sector, after the restructuring of capitalism in the 1980s, has led to a global "Information Revolution" (Castells, 1989; Kranzberg, 1989; Soja, 2000). This "revolution" is transforming traditional production mechanisms of land, labour and capital by focusing on the production of information (Bell, 1974; Singhal and Rogers, 1989). Brute strength is no longer a prerequisite to entering the labour market, rather, information and knowledge have become vital elements in the emerging networked society.

Castells (1989) provides a comprehensive analysis of the issues that led to this "informational mode of development". Accordingly new forms of capital accumulation are emerging, namely, an increased share of surplus from the production process through technological innovation; a change in state intervention towards an emphasis on capital accumulation; and the internationalisation of the economic process.

Information is thus communicated globally through telecommunication technologies, where technologies transcend geographic boundaries through networked electronic spaces. Contrary to a popular association of new technologies that predicted the "death of distance" and the "end of cities", new technologies facilitate global networks of economic activity that supplement face-to-face interaction.

A more threatening trend, however, that sprung out of this information and technology driven restructuring is the increasing marginalisation of areas that are not globally networked. Most developing countries, particularly in Africa, are excluded from this capital restructuring. Castells coined the phrase of “informationless black holes” (*cf. figure 3.2*) to describe these excluded regions.

Yet, governments and international development institutions (the World Bank for instance) have embraced new technologies as the panacea for underdevelopment and destitution in Africa, due to their significance in the “new economy”. Still, Ayittey (2001) asks, “would this new global economic order do for Africa what the World Bank and the IMF couldn't achieve after more than 20 years of Structural Adjustment?”

There has been a plethora of initiatives in the developing world to expand the use of new technologies, and Simone (2003) notes, “it remains unclear as to how Africans from various walks of life and in various national contexts are engaging with these particular aspects of the New Economy” (1).

South Africa’s conflict between affluence and destitution is based on a history of inequality (Terreblanche, 2002). As apartheid was based on spatial separation of races and ethnic groups, socio-economic challenges have to take into account these spatial manifestations of power relations in the post-1994 city. South Africa’s telecommunications policy sees a role for new technologies in addressing social equality and exclusion:

> The information society is not an impossible dream, nor is it a sophisticated nicety. It is fundamental to the upliftment and the improvement in the quality of life of all the disadvantaged people of the world, to ensure that future generations do not suffer from the same disadvantages and that the principle of equal opportunities prevails.
>
> (Minister Jay Naidoo, 1998: 2)

1.2 PURPOSE OF THE STUDY

New technologies have a dual character of either exacerbating the exclusion of historically marginalized urban residents or potentially integrating them into mainstream global social, economic, cultural and political activity. The purpose of this study is to explore whether the implementation of ICTs in South Africa empowers peripheral urban communities or not.

The Telecommunication Act (no. 103 of 1996) sees affordable universal access to ICTs as pertinent to bridging the digital divide and addressing social inequality. It thus provides for the establishment of an agency, the Universal Service Agency (USA), which would oversee the implementation of the goals of universal access and universal service in under-serviced or previously disadvantaged areas, through telecentres.

As the South African government's objective in implementing ICTs via telecentres is to empower local residents through access to ICTs, this study requires a theoretical framework that is informed by "planning for social transformation" because at the centre of "planning for social transformation" is an empowerment project.

The "planning for social transformation" literature extends the empowerment project from planning practitioners to include various actors like civil society organisations, the state, and ordinary people. These different actors can work in collaboration to accomplish some kind of empowerment. I am going to use this theoretical empowerment lens to test whether the state is achieving its empowerment objectives in four telecentres located in previously segregated black townships.

1.3 RESEARCH METHOD

A qualitative research method was adopted for this study. This method primarily focused on interviewing people involved in the day-to-day running of USA initiated telecentres. The USA, through the Universal Service Fund (USF)[1], funds projects in historically disadvantaged areas.

The areas that were looked at include the Mamelodi Community Information Services (MACIS) in Mamelodi, the Batho Pele Telecentre (BPT) in Thembisa, the Alexsan Kopano Telecentre (AKT) in Alexandra, and the Siyabonga Multipurpose Telecentre (SMT) in Orange Farm (*cf. figure 1.1)*. These telecentres were specifically chosen because they are located in disadvantaged areas established to house black African populations under the apartheid government.

It is worth noting that previously segregated black areas are renowned for having had an active civil society sector. Civil society played a vital role in unifying communities against racial oppression and contributed immensely to the eventual decapitation of the apartheid government.

However, since the general elections in 1994 the civil society sector has had to realign its focus away from being anti-state towards reconstruction and development. South Africa's civil society is still in the process of reformulating their roles in the new comart of democracy (Winkler, 2005). In addition, many civil society leaders of the pre-1994 period have since joined government in the new democracy and this has subsequently weakened the sector.

[1] The USF sources its revenue through a levy of 0.1 to 0.5 percent imposed on telecommunications licensees by the government (Gulube, 2001)

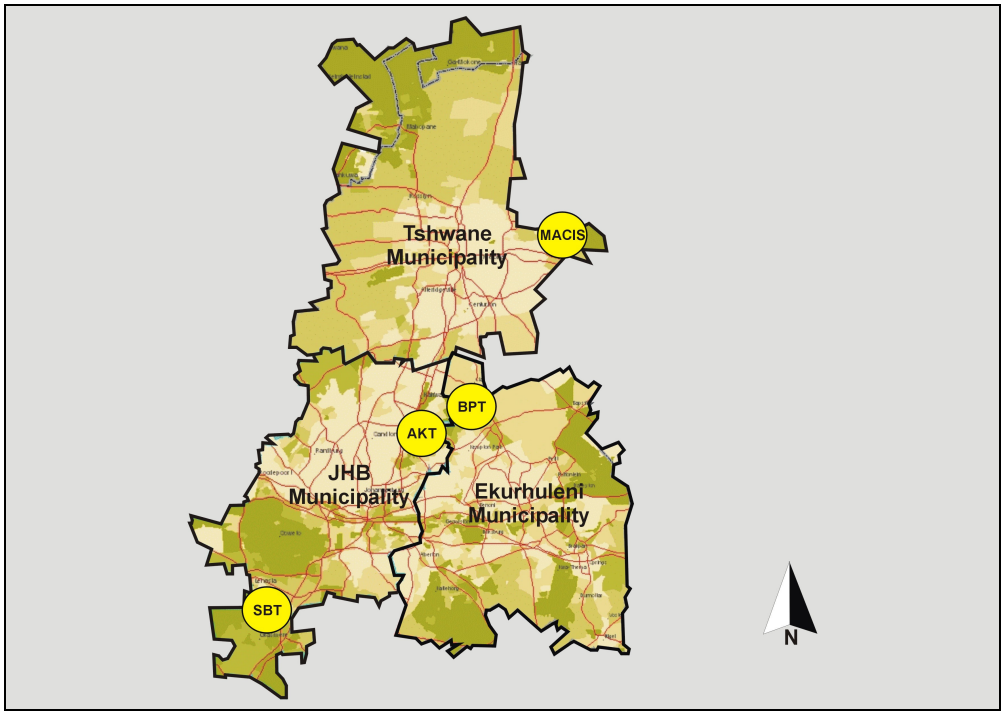


Figure 1.1: Location of Telecentres

Source: Adapted from Municipal Demarcation Board, 2003

A number of factors were considered in undertaking the study. For example, the operational structure of telecentres, namely, whether telecentres are implemented as non-profit organisation or as private enterprises is an important factor as this informs the target group that the centre aims to empower. The history of the area is also an important factor.

The Telecommunications Act (1996) is aimed at empowering historically disadvantaged areas and people. The state's emphasis on integrating "townships" and other excluded urban spaces via information technology provides a useful insight into the degree in which new technologies can contribute towards resolving socio-economic inequality in South Africa.

Telecentres are thus aimed at empowering the communities in which they are located. The location of these researched telecentres and their

accessibility to local residents is also an important factor. Batho Pele is located in municipal offices. The Mamelodi Information Community Services is also located in municipal offices, close to the main taxi rank in Mamelodi. Alexsan Kopano is housed in the area's community centre that is located along Alexandra's main taxi route (*figure 1.1*). The Siyabonga Centre is located on a major mobility route through Orange Farm.

Figure 1.2: Location of Alexsan Kopano Telecentre

Source: adapted from Cities Revealed (position of north arrow not accurate)

1.4 CHAPTER OUTLINE

The chapter has provided some background on the issue of new technologies and their importance in economic activity. Chapter two will explore how new technologies function as agents of social polarisation. The characteristic of new technologies such as new technologies exacerbating socio-spatial exclusion when left to operate in the market economy, and structural cultural bias in their use, will be emphasized.

In chapter three, the study will address issues of how the idea of "the community" further marginalizes people. Findings of the preceding

chapter, particularly those related to the “network” structure of social relations will be highlighted. Chapter four will discuss the issue of empowerment through ICTs. Chapter five will draw upon lessons from international cases (in India), and explore how local ICT projects have achieved empowerment. Finally the study will conclude in chapter six with some recommendations on how planning could engage with ICTs for social transformation.

2 ICTs IN URBAN SPACE

2.1 INTRODUCTION

"Technology in general (and the internet in particular) has been…embraced as a medium for diminishing spatial, social and political inequalities" (Servon, 2002: 222). This statement holds true for both technological enthusiasts and urban analysts concerned with the effects of ICTs on urban space and their potential (or uncertainty) for "community empowerment" (Schön, 1999).

There is thus a belief that a divide is proliferating between those who have the resources, education, and skills to access new ICTs and those who do not (Servon, 2002). Graham (2002b) notices two trends that dominate contemporary cities of the South. The first is rapid urbanisation, and the second a highly uneven increase in the application of digital ICTs in everyday life of present-day societies.

> The complex intersection of human settlement and ICTs…is helping to forge new landscapes of innovation, economic development, cultural intersection, political dynamics and social inequalities within cities and urban systems.
>
> (Graham, 2002b: 34)

Graham (2002b) sees this intricate relationship as a paradox between clusters, enclaves of super connected people, firms and institutions with intense access to information services versus "large numbers of people with non-existent or rudimentary communications technologies and very poor access to electronic information" (34). There is an interrelationship between ICTs and socio-economic-spatial patterns of inequality in the urban landscape.

Similarly, Castells (1999b) sees complex, mixed socio-spatial trends of:

- The integration of elite high valued people and spaces involved in the information economy increasingly polarised from low valued people and spaces who are not,
- A concentration of front office activities ("milieux of innovation") and disconnection of back office ones within metropolitan regions, and
- A diffusion of production, management and distribution of products and processes throughout an interconnected global nodal system.

Fors and Moreno (2002) sum up the overall impression of this trend by most urban analysts involved in ICT/social equity discourse: "in our contemporary world, having access to information and knowledge plays a crucial role in advancing economic and social well-being" (198).

Before we continue discussing these various intersections and relationships between ICTs and urban space/social equity, we first need to define and understand what ICTs are. The aim of this chapter is to explore such a definition by examining the interaction between ICTs and urban space. The interaction of ICTs with urban space exacerbates socio-spatial patterns of inequality. This trend will be emphasized throughout the discussion.

Yet, even though ICTs intensify socio-spatial trends of inequality, there is an inherent potential in ICTs to benefit marginalized communities. An interrogation of how ICTs are agents of social polarisation will follow. Thereafter the notion of the "dual city", as explained by Castells (1996), will be discussed in light of earlier discussions of ICTs and polarisation.

The dual character of ICTs as agents of polarisation as well as potential instruments of development will be emphasised.

2.2 DEFINING ICTs

What exactly are information and communications technologies (ICTs)? Fors and Moreno (2002: 199) define ICTs as the "electronic means of capturing, processing, storing and communicating information" and include a wide range of technologies like the mobile phone and the Internet. Rao (2004: 261) defines ICTs as a "set of activities that facilitate the capture, storage, processing, transmission and display of information by electronic means".

The South Africa Department of Education broke down the definition of ICTs into two parts to come up their definition. Accordingly,

> *Information Technology (IT)* is, …[the] equipment (hardware) and computer programmes (software) that allow us to access, retrieve, store, organise, manipulate and present information by electronic means…and, *Communication Technology (CT)* is…used to describe telecommunications equipment through which information can be sought, sent and accessed - for example, phones, faxes, modems and computers.

Therefore,

> *Information and Communication Technologies* (ICTs) are…the convergence of information technology and communication technology…(which)… are the combination of networks, hardware and software as well as the means of communication, collaboration and engagement that enable the processing, management and exchange of data, information and knowledge.
>
> (Republic of South Africa Department of Education, 2003: 15)

The adding of "communications" to the term information technology "reflects the increasing role of both information and communications technologies in all aspects of society" (Ackerman, 2004:3). There are numerous other ICT definitions, however from the definitions provided above one can deduce that ICTs are concerned with the capture, storage

and communication of information and knowledge. Essentially, ICTs enable the handling of information and facilitate communication among people, between people and electronic systems, and among electronic systems (Cheung, 2001).

There is increasing consensus that the relationship between ICTs and urban space is exacerbating socio-spatial patterns of inequality. There are multitudes of works that deal with social inequality (see Pojman and Westmoreland, 1997). It is not the purpose of this report to examine the levels and different theories of inequality, however it is worth noting that while ICTs increasingly contribute to unleashing productivity and creativity in economic activities, historically marginalized communities are further excluded by technological changes over which they have no control (Castells, 1999; Hall, 1999; Sanyal and Schön, 1999).

2.3 INEQUALITY

Castells defines inequality as “the unequal appropriation of wealth (income and assets) by individuals or social groups” (1998: 6). Crankshaw and Parnell (2004) explain inequality in terms of the correlation between the urban demand for different kinds of labour and the level of skills offered by urban dwellers. The ability or inability of different groups to satisfy such a demand determines the inequality between these various groups.

> In Africa, there are approximately 3.11 million people with web access of which two thirds are located in South Africa (roughly 1.82 million people). If we take the current population of South Africa as 41 million this implies that 1:22 people in South Africa has access to the Internet. Compare this to the ratio of 1:250 for Africa, 1:35 for the world and 1:3 (daily users) for North America
>
> (Petzer, 2001)

Evidently, Africa appears less able to satisfy the demand of ICT related activities compared to other regions of the western/developed world. This unavoidably excludes a large proportion of the population in the African region from mainstream “global” economic activities that are mediated through ICTs. This characteristic will be discussed in section 2.4.1.

Africa also appears to be less able to take advantage of the economic creativity and productivity that ICTs are acknowledged to provide. Castells (1996; 1999b) labelled Africa as the largest “black hole of informational capitalism”, by referring to the continent as the “fourth world”. Castells’s assertion is evident in the *World by Night Satellite Image* that shows the distribution of electricity in the world (*cf. figure 2.4*).

There is a multitude of ways through which inequality is manifest in society (see Pojman and Westmoreland, 1997), however, the inequality that is important to this study is that of opportunity in accessing ICTs and the benefits that come with such access. Poor people and regions are excluded from mainstream economic activity due to their lack of appropriate infrastructure used to access new ICTs. By appropriate infrastructure, this report refers to the physical (hardware, power supply, etc.) and social (computer literacy and educational resources) infrastructures that are used to facilitate access.

The following sections will demonstrate how social inequality, is created through the digital divide. This divide is interrelated to the polarisation of urban space. As such ICTs are agents of social inequality and polarisation.

2.4 ICTs AS AN AGENT OF SOCIAL POLARISATION

> Whilst dominant domains of the economic, social and cultural fabric of the planet are now being mediated with ICTs at an astonishing pace, between 60 percent and 70 percent of the world has never made a phone call.
>
> (UNDP, 1999 in Graham, 2002b: 34)

> Information technology is not the cause of the changes we are living through. But without information and communication technologies none of what is changing our lives would be possible.
>
> (Castells, 1998: 2)

I am not suggesting that ICTs have no value in the South. Rather, technology is influenced by, and in turn also influences, social interaction and other structures that shape society. We need to remember that, according to Castells (1998), without technology none of what is transforming today's society would be possible.

Nonetheless, the *International Labour Review* (2001) noted that there are 82 Internet hosts per 1000 population in developed/OECD countries, compared to 0.85 per 1000 population in non-OECD countries. The journal also notes 22 times as many telephone lines, 92 times as many computers and 102 times as many Internet users in high-income countries than in lower-income countries. This shows great global imbalances with regard to accessing economic opportunities, particularly during an era where a large share of global economic activity is mediated through new ICTs.

Technology optimists see ICTs as potential agents that can ameliorate this insidious state of hopelessness and poverty facing "the urban poor" (Mitchell, 1995; Negroponte, 1995). However, contrary to this, others perceive new ICTs as agents of marginalization from mainstream economies.

Although we cannot completely dismiss technology enthusiasts' standpoint that ICTs have the potential to advance economic and social well-being of the poor, sceptics argue that ICTs tend to be concentrated in mainstream urban nodes and as such create a socio-spatial divide within metropolitan regions between wealthy and poor urban districts (see *figures 2.1* and *2.2,* and compare with *figure 5.1*[2] *in page 84*).

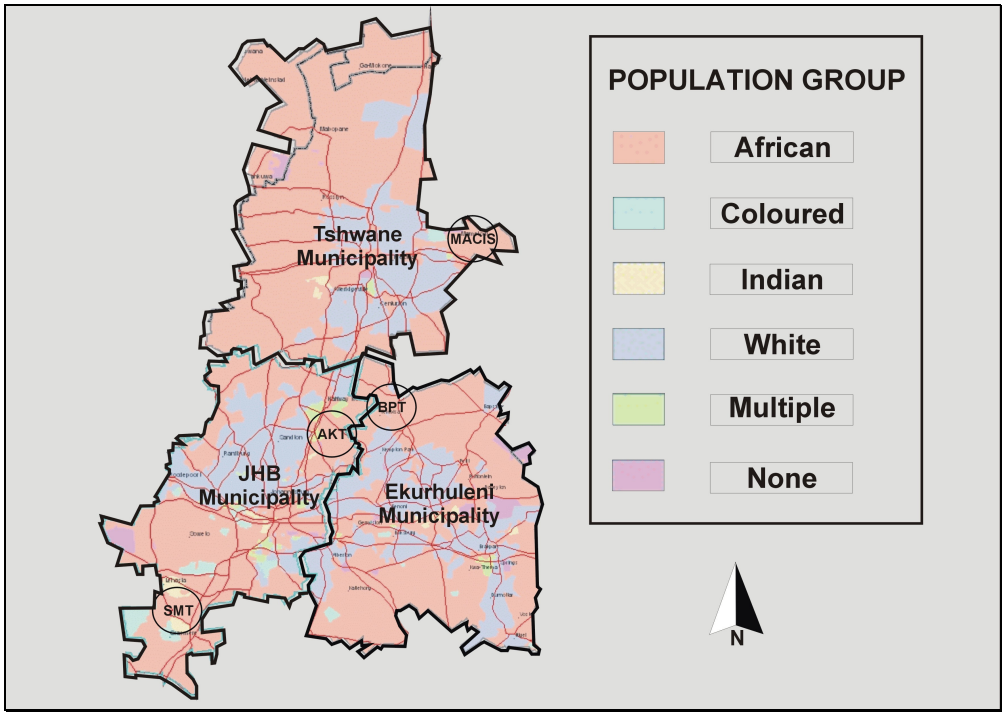


Figure 2.1: Dominant Population Group in eKurhuleni, Johannesburg and Tshwane
Source: Adapted from Municipal Demarcation Board, 2003

[2] The black population is concentrated (figure 2.1) in the regions that exhibit high unemployment rates (figure 2.2.). Compared to the distribution of household connection to telephone lines and/or cell phones (figure 5.1), a link can be forged between the lack of technological infrastructure and poverty. The socio-spatial distribution of this poverty, however, is a result of deliberate historical segregation and exclusion spatial planning.

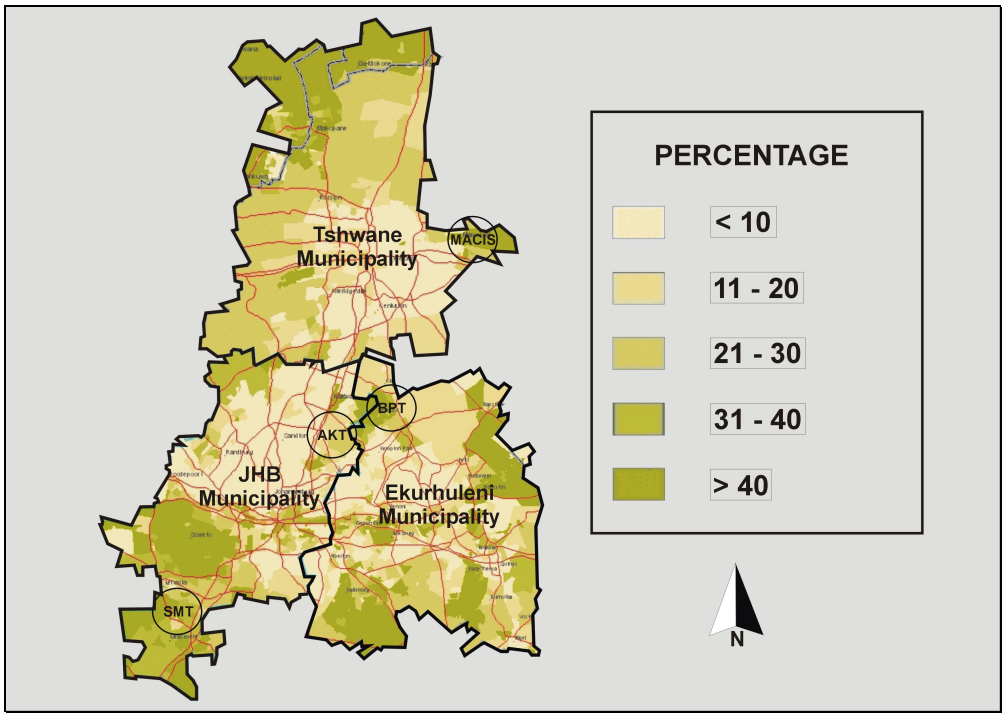


Figure 2.2: Economically unemployed population in eKurhuleni, Johannesburg and Tshwane

Source: Adapted from Municipal Demarcation Board, 2003

> Precisely at the historic time when information technologies contribute to unleashing productivity and creativity, the empirical record shows a marked increase of social inequality throughout the world, both within countries, and between countries, with a few noted exceptions.
>
> (Castells, 1999a: 7)

Present ICT development trends are helping to support new extremes of social and geographic unevenness. How are these new social and spatial extremes created? Why are they created? And what do they mean for already physically and economically marginalized communities? What relationship is there, if any, between ICT access and urban poverty?

The world city hypothesis is regarded as a key manifestation of contemporary socio-economic urban processes. This next subsection will explore this phenomenon in trying to understand urban social inequality.

2.4.1 The World City Hypothesis

The global economic recession of the mid 1970s brought about the shift from Fordism and Keynesian state production guidelines to more flexible modes of production and urban management (Bell, 1974; Castells, 1989, 1996; Harvey, 1989; Kelley *et al*, 2004). Different authors describe this shift as the "globalisation" process differently. For Castells (1989) globalisation is the proliferation of "the informational mode of development", Ayittey (2001) termed this shift "the third industrial revolution" and Harvey (1989) calls it "urban entrepreneurialism".

The new flexibility of capital, as influenced by ICTs and the reduction in state welfare, characterises most of what constitutes contemporary urban capitalism (Harvey, 1989). What is most pronounced in this informational paradigm is that capital, regardless of its flexibility, is concentrated in few global nodes, or global command and control centres of the global north (Castells, 1989, 1996; Sassen, 1991, 1994; Castells and Hall; 1994; also see figure 2.3).

These command and control nodes have facilitated an increase in urbanisation rates throughout the globe as they increasingly attract migrants from within and outside of their national boundaries (Harvey, 1989; Sassen, 1991, 1994; Castells, 1989, 1996). Moreover, these command and control centres (which are usually well-established cities) are characterised by advanced infrastructural capabilities that allow them to carry out their command and control functions through ICT mediated global communication.

Urban development, in the last couple of decades, has been explained through the "World City hypothesis" that focuses on the global functions of cities (Hall, 1966; Friedmann and Wolff, 1982; Sassen, 1991, 1994 and 2002; Beaverstock *et al*, 1999; Gugler, 2004; etc). Hall (1966) sees these

"world cities" as cities of global functional capabilities, with regard to their power and influence in politics, trade, communications, finance, education, culture and technology (also see Friedmann and Wolff, 1982; Sassen, 1991; Clark, 1996; Beaverstock *et al*, 1999).

Gugler (2004) starts his editorial by contending that most of the 'World City' literature is too focused on cities at the core of the world city system, and in the process ignores "world cities" beyond the west. He argues that the literature is devoted to the triumvirate of New York, London, and Tokyo, and where it moves beyond this "first tier" of the hierarchy it usually explores North American and western European cities (see for instance Moss, 1987; Knight, 1989; Sassen 1991, 1994 and 2002).

Beaverstock *et al*[3] (1999) noted a similar trend "Although there is a general consensus on which are the leading world cities, there is no agreed-upon roster covering world cities below the highest level" (445). They thus came up with their roster of "world cities" categorised according to a city's worth in global accountancy, advertising, banking/finance and law (*cf. figure 2.3*). The cities that are considered in this roster are extraordinarily diverse and include variable regional and global articulations.

Johannesburg featured in the roster as a "Gamma World City"[4]. Although Johannesburg does not have the reach of the major global centres, the city's importance in South Africa, the Southern African region, and the rest of the African continent, echoed in the world city roster suggests particular explanations with regard to the increasing socio-spatial polarisation growing within Johannesburg's landscape.

---

[3] J.V. Beaverstock and P.J. Taylor are co-directors of the Globalisation and World Cities (GaWC) Study Group and Network that is dedicated to studying the phenomenon of world cities as "...a key physical manifestation of contemporary globalisation". For more information on GaWC go to http://www.lboro.ac.uk/gawc/

[4] There are Alpha, Beta and Gamma world cities. For a detailed discussion on this gradation, see Beaverstock *et al* (1999). For a comprehensive discussion on Johannesburg as a world city, see Crankshaw and Parnell (2004)

Looking at the socio-spatial patterns of Johannesburg through the world city hypothesis would provide useful insight, particularly with regard to the intensifying socio-spatial polarisation and inequality between wealthier and poorer districts. However, there are "global" differences across and within cities.

The world city hypothesis inherently suggests an all-pervasive spatial process of globalisation. It also suggests supremacy of global connection as central to "cityness", or "world cityness" in particular. This marginalizes the way we ought to think about our cities, with regard to the dominance of the informal networks or the informal economy fundamental to cities in Africa[5].

Taylor and Walker (2001: 42) see "Johannesburg as the most isolated world city in that it has a continent to itself and no clear similarities with other world cities". There are problems in the city that are of global scale, yet they assume local forms and meanings that are shaped by specific histories of the area (Flyvbjerg, 1998; Sassen, 2004; Yiftachel *et al*, 2001; Flyvbjerg and Richardson, 2002).

Sassen (2004) argues that we should not confuse "world cities" with "global cities", as these two concepts are different. She says that although "most of today's global cities are also world cities…there may well be some global cities that are not world cities in the full, rich sense of that term" (*opt cit*: 373). She provides examples of numerous cities, Johannesburg included, which are "well-established financial centres, deeply articulated with global capital markets" but not necessarily world cities (*op cit*: 374).

[5] By the importance of informality in cities in Africa, the study does not intend to suggest some kind of a failed form of "modernity". The informal economy forms a major part of survival strategies for poor urban residents in "the South".

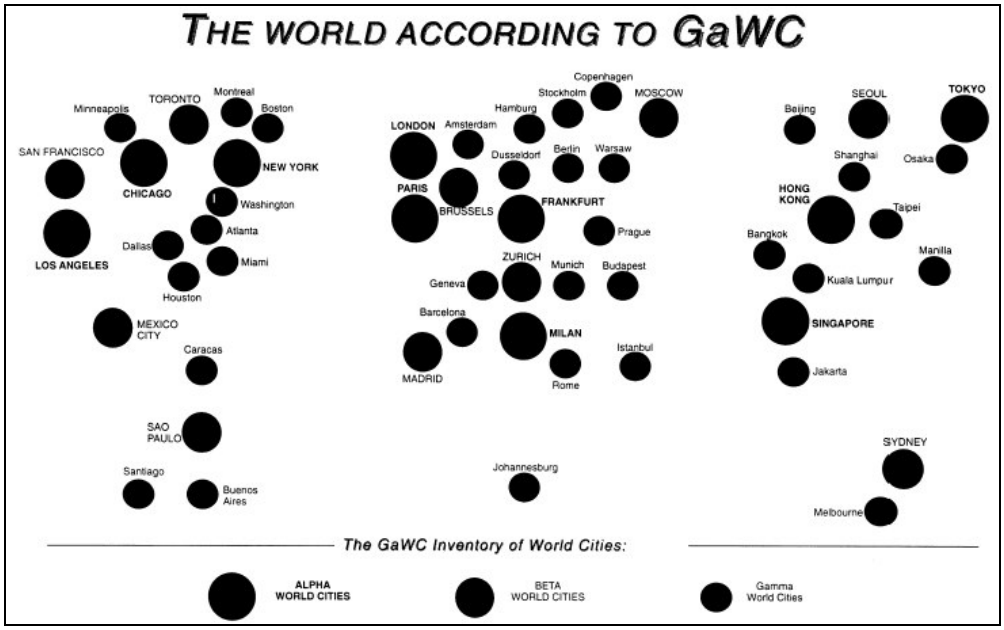


Figure 2.3: The World According to GaWC

Source: Beaverstock *et al*, 1999: 456

Various authors arrive at a wide range of conclusions regarding the relationship between ICTs and urban space/social inequality and how this is reflected in the polarisation of urban landscapes. Severe inequalities have been described as shaping the phenomenon of world cities, and this phenomenon of world cities has in turn exacerbated these inequalities (Harvey, 1989; Gugler, 2004). Harvey's urban entrepreneurialism[6] suggests that, with the help of ICTs,

> since capital tends to be more rather than less mobile these days, it follows that local subsidies to capital will likely increase while local provision for the underprivileged will diminish, producing a greater polarisation in the social distribution of real income.
>
> (Harvey, 1989: 12)

[6] Urban entrepreneurialism is the shift of urban governance, the occurred in recent years, to becoming preoccupied with encouraging local development, economic growth and employment. This shift to urban entrepreneurialism has contrasted earlier managerial practices that primarily focussed on providing services, facilities and state welfare to urban populations (Harvey, 1989)

Henceforth, entrepreneurialism in urban governance contributes to increasing inequalities in wealth and income in metropolitan regions where these global cities are located. Castells (1989) contends that the inequality is primarily caused by the increasing proportion of high paying skilled ICT service jobs in conjunction with an increasing requirement for low paying low service jobs within the economy of the "informational mode of development".

Racial inequality has been the cornerstone of social inequality in South Africa. However, in the past decades "inter-racial inequality is increasingly being overshadowed by intra-racial inequality" (Crankshaw and Parnell, 2004: 350). Given the history of racial domination, Johannesburg has been marked by sharp uneven investments in the built environment between black and white districts (Terreblanche, 2002; Sassen, 2004). Equally, we cannot dismiss the intra-black inequality that has become evident throughout the socio-spatial landscape of the city (Marais, 2001; Terreblanche, 2002; Sassen, 2004).

Urban landscapes are generally a reflection of a region's history (Abu-Lughod, 1994; Flyvbjerg, 1998). Johannesburg's socio-spatial pattern exhibits a footprint of racial inequality, epitomised through 'previously' black townships like Alexandra, Mamelodi, Orange Farm and Thembisa. We cannot, however, dismiss the importance of the contemporary forces that are at play, which forge new inequalities even within racial groupings.

Socio-spatial polarisation is exacerbated through new ICTs, however minimal their effects are in the post apartheid city. The provision of ICT facilities in disadvantaged areas create divides between those who can afford to enrol in ICT programmes and those who cannot (*cf. section 5.4.3*). This does not suggest a change towards viewing all problems of development as by-products of societies being disconnected (Simone, 2003).

The primary concern of this study is to look into the socio-spatial polarisation of urban regions as affected by ICTs. As such, inequalities discussed above are generally a result of "the digital divide" (Norris, 2001; Mansell, 2002).

2.4.2 The Digital Divide

Figure 2.4 confirms the global north (Japan, North America and Western Europe) as the centre of global command and control in the world city system. The world/global cities in the global South are also evident. They are brightly lit because they have the "appropriate" ICT infrastructures (in this case power supply) that facilitate global communication.

The South African ICT Charter defines the "digital divide" as

> The disparity between those who use and have access to ICTs and those who do not… [The digital divide] is characterised by a lack of meaningful access to ICTs primarily because of historical and demographic factors between racial groups, lack of basic literacy… [And it also] encompasses the lack of access to ICT infrastructure and services and include physical, digital, human and social resources and relationships.
>
> (ICT Charter Steering Committee, 2005: 6)

Without power supply it is virtually impossible to function as a global centre because ICTs need power to function. Moreso, "globalisation" or the world city system bypasses regions without power supply (and other necessary infrastructures that facilitate access to ICTs). The ability of ICTs to transfer information anywhere in the globe in real time without regard for geographical limitations allows for efficient communication, and thus eases the exercise of command and control functions of world city centres (Castells, 1996).

Servon (2002) believes that the “digital divide” is caused by the lack of well-developed infrastructure in poor regions (particularly in the global south). In South Africa, the provision of infrastructure has historical bias towards “white” areas whilst “black” areas were neglected. Previously black segregated areas have inadequate infrastructure and need the most attention in terms of infrastructure provision.

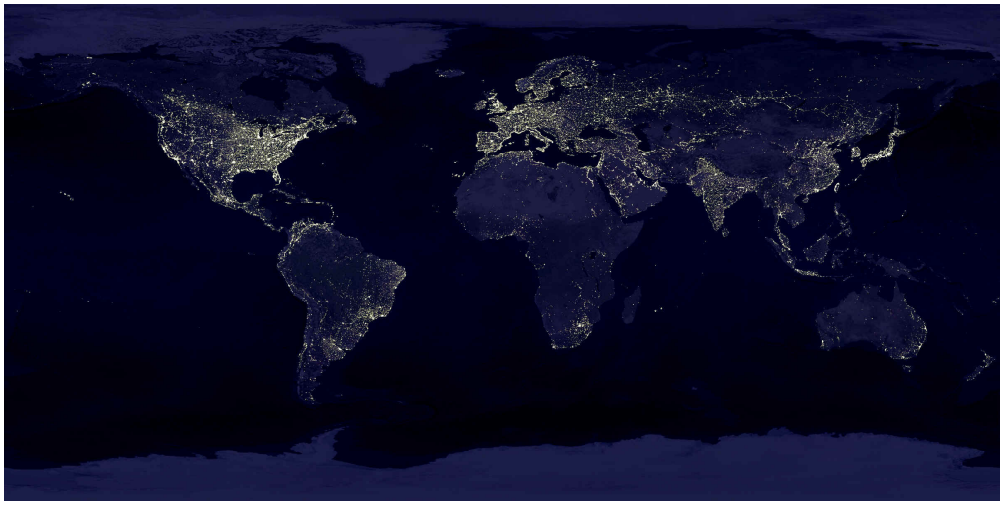


Figure 2.4: A composite satellite image of the world at night in which the distribution of electricity is evident - note the darkness of the African continent

Source: Goddard Space Flight Centre, 2005

Structural Adjustment macro-economic policies also form part of the problem. Sanyal (2000) sees the digital divide as primarily the inability of the market to accommodate the urban poor in the digital world (also see Sanyal and Schön, 1999; Marcuse, 2000). Although some kind of empowerment is achieved, the researched telecentres tend to exclude the very poor in urban districts. Graham (2001 and 2002a/b) also supports this line of argument contending that the market is unwilling to meet the infrastructural demands necessary for the urban poor to gain access to the electronic world.

There are numerous other accounts explaining the 'digital divide'. However Graham (2002b) identifies four characteristics of ICTs that he sees as explanatory for urban polarisation:

- ICTs tend to extend the power of the powerful;
- ICTs underpin intensified unevenness through tying together international divisions of labour;
- ICTs allow socioeconomically affluent groups selectively to bypass the local scale; and
- ICTs tend to be culturally and economically biased, especially in terms of the wider development of what we might term the emerging 'international information marketplace'.

(Graham, 2002b: 36)

Although Graham identifies four, for the purposes of this study the report will only analyse three characteristics.

ICTs extend the power of the powerful

The manner in which ICTs relate to cultures and the landscapes of local spaces tends to be a relationship of "…extending the power of the powerful whilst further marginalizing the less powerful within the same geographical spaces" (Graham, 2002b: 37). The urban poor face equity barriers without the necessary access to ICTs (Graham and Marvin, 1996; and Fors and Moreno, 2002).

"Access" to ICTs is neither a panacea for social inequality nor does not mean mere connection to the Internet (Sanyal and Schön, 1999; Servon, 2002). It means the availability and ownership of the necessary social infrastructure needed to exploit the opportunities offered by new ICTs. Access to ICTs is a tool to realising empowerment. This social infrastructure referred to encompass factors like skills, knowledge, infrastructural access and other resources needed by individuals to be

able to take advantage of the benefits of access (Graham, 2002b; Sanyal and Schön, 1999; Sanyal, 2000).

Coupled with the lack of telecommunications infrastructure, the lack of social infrastructure in poor areas ensures that those who have this infrastructure (affluent areas) get richer as they continue to exploit opportunities offered by new ICTs. The poor get poorer and remain trapped in cyclical informational poverty: what Castells (1999b) terms "informationless ghettos"/"black holes" or the "Fourth World".

Graham (2002a) notes that in contemporary economies access to information and knowledge constitutes the primary aspects of 'real power'. Ayittey (2001: 1) also supports this, as "knowledge is now the new basis for wealth". The famous nineteenth century philosopher, Friedrich Wilhelm Nietzsche, also acknowledged, "knowledge[7] is power" (Flyvbjerg, 1998).

Sebusang and Masupe (2003) noted that ICTs have become critical tools for business, governance and information exchange globally. The lack of access to ICTs inevitably certifies the marginalization of the urban poor from mainstream societal, economic and political processes (nationally and globally). More so, the lack of access to ICTs ensures the disempowerment of individuals and communities:

> 'Whilst new information and communications technologies are driving globalisation', write the United Nations Development Programme (UNDP), they are also 'polarizing the world into the connected and the isolated'
>
> (Graham 2001: 340)

[7] Note the use of the word "knowledge". ICTs enable information handling and communication. It is the ability of people to produce knowledge relevant to their contexts that leads to realising some kind of "empowerment" (*cf. Chapter 4*)

ICTs allow affluent groups to bypass the local

ICTs tie together a range of production areas at a global scale. In conjunction with transportation networks, ICTs selectively bypass spaces that are not 'important' to the mainstream global economy of the informational society (Graham, 2002a). Castells (1996) explains this characteristic of ICTs through his notion of the "space of flows" versus the "space of places".

Global nodes, namely cities, are connected electronically to facilitate global economic processes (*cf. figure 2.4*). Although the local is still important (Shipalana, 2004), ICTs and transportation networks allow the information rich to connect to those areas they are active in, whilst selectively disconnecting from other poor local spaces. This is the basic logic of the network society: electronic connection between global nodes that exploit global opportunities.

Graham (2001) notes that these connected "premium network spaces" of the "new city" create gaps throughout metropolitan terrains and disallow the information elite to look beyond the well designed urban matrix of electronic communication and transport networks.

> New communications technologies, and a metropolitan transport system, allow people to stay selectively in touch with those individuals/groups that they want to, whilst disconnecting from the city at large.
>
> (Castells, 1999:15)

ICTs are culturally and economically biased

The diffusion of ICTs is biased towards English speakers. A majority of Internet sites are in English. Graham (2002b: 46) quotes an example given by Everard who suggests "…it is far easier for a Russian language speaker with a computer to download works of Dostoyevsky translated

into English to read than it is for him to get the original in his own language". In South Africa, only 25% of the black population understand English well enough to function in public life (Wasserman, 2002: 310).

The prevalence of the English language in the informational city limits the access of those who cannot comprehend English. Inevitably this creates a division between the informational opportunities available to English speaking groups and non-English speaking groups.

This divide is not only drawn along language lines. Educational qualification, economic privilege, age, gender and location are also pertinent to access. Graham (2001; 2002b) notes that most of the world's Internet users are from privileged backgrounds, are highly educated, are young urbanites and are English speakers. The *International Labour Review* (2001) notes that in the European Union, Japan, the Russia Federation, and the Middle East, 25 percent, 18 percent, 19 percent and 4 percent respectively of Internet users are women.

Box 2.1: The Digital Divide within Countries

Though data are limited on the demography of Internet Users, Internet sites are clearly concentrated. In most countries Internet users are predominantly

- *Urban and located in certain regions*. In China the 15 least connected provinces, with 600 million people, have only 4 million Internet users – while Shanghai and Beijing, with 27 million people, have 5 million users. In the Dominican Republic 80%of Internet users live in the capital. And in Thailand 90% live in urban areas, which contain 21% of the country's population. Among India's 1.4 million Internet connections, more that 1.3 million are in the five states of Delhi, Kamataka, Maharashtra, Tamil Nadu and Mumbai
- *Better educated and wealthier*. In Bulgaria the poorest 65% of the population accounts for only 29% of Internet Users. In Chile 89% of Internet users have had tertiary education, in Sri Lanka 65%, and in China 70%
- *Young*. Everywhere, younger people are more apt to be online. In Australia 18-24-year-olds are five time more likely to be Internet users that those above 55. In Chile 74% of users are under 35; in China that share is 84%. Other countries follow the same pattern.
- *Male*. Men make up 86% of users in Ethiopia, 83% in Senegal, 70% in China, 67% in France and 62% in Latin America.

Some of these disparities are easing. For example, the gender gap sees to be narrowing rapidly – as in Thailand, where the share of female users jumped from 35% in 1999 to 49% in 2000, or in the United States, where women made up 38% of users in 1996 but 51% in 2000. In Brazil, where Internet use has increased rapidly, women account for 47% of users.

Source: UNDP, 2001: 40

Although the Internet, for instance, is a liberating potentially technology, it is particularly biased against certain cultures and people, as the productive information it makes available is not relevant to particular social groups. Henceforth, access goes beyond the ability to "logon" to ICTs.

Access includes other aspects such as making information relevant to the local by ensuring that the electronic content available meets the information requirements of marginalized groups. India has attempted numerous strategies to overcome these barriers (UNDP, 2001; *cf. chapter 5*). Access involves meaningful inclusion of the diverse social groupings that make up society. These exclusionary factors of ICTs have facilitated the emergence of the "dual city" (Castells, 1996).

2.5 THE "DUAL CITY"

The "dual city" is a classic theme in urban sociology. Castells (1989) describes this "dual city" phenomenon as the conflict between opulence and poverty in shared urban spaces. This chapter attempted to demonstrate that new ICTs create metropolitan landscapes characterised by socio-spatial polarisation, and will continue to do so unless interventions are proposed.

The advent of new technologies has divided economies and societies into high-end and low-end groups thus creating a "polarised urban geography" (Hall, 1999). Fors and Moreno (2002) indicate that the limited use of ICTs by the affluent segment of the population creates information gaps between the rich and the poor and hence constrain the development of the poor.

As affluent people get richer, the poor are trapped in a vicious cycle of poverty, crime, underdevelopment, isolation, degradation and

informationlessness. How can this process of social exclusion, that appears to be inherent in the relationship between ICTs and urban space, be reversed so that marginalized communities may gain access to ICT opportunities? Is there a chance for the poor to "escape" the abandoned spaces of the informational city?

The very nature of ICTs excludes the urban poor from informational access. Although the price of personal computers (PCs) has gone down in the last few years, the poor remain excluded from the electronic world, as they still cannot afford, in the sense referred to earlier in the chapter (Sanyal, 2000). The question of how we can meaningfully integrate and provide the necessary infrastructure opportunities for "all" South Africans will be dealt with in chapter 4. For now, we need to ask how the provision of access to ICTs will help or further distress marginalized groups.

Even though the future does not look promising for "the poor", Sanyal (2000; also see Sanyal and Schön, 1999) provides four reasons for being enthusiastic about advanced information technology and the potential this technology may offer individuals, groups and/or communities currently excluded from mainstream informational networks:

- The interactive potential and decentralising nature of ICTs make them appear democratic and people friendly,
- ICTs allow communities to receive up-to-date information on resource availability[8], in light of the unavailability of resources for social spending from local government (Harvey, 1989),
- ICTs also allow communities to access up-to-date efforts on community development measures throughout the world, which communities can use to apply to their own places, and

[8] At the Siyabonga Multipurpose Centre in Orange Farm, three international volunteer were accessed through AFS Interculture, which is an international organisation that promotes volunteerism and intercultural exchange.

- ICTs offer the opportunity for interaction between the computer and its users. This creates viable conditions for a learning environment where communities can build confidence, exercise self-empowerment and become entrepreneurial. This also allows people to generate knowledge that is relevant to their local contexts.

These potentials will be further explored in chapter 5 with a particular emphasis on local "empowerment" as empowerment is central to planning for social transformation theories and practices. As such, chapter 3 will begin to investigate community empowerment debates necessary for promoting ICT access in current "informationless ghettos", or the marginalized nodes of the "dual city".

2.6 CONCLUSION

In contemporary urban environments, there are stark inequalities that polarise cities into high valued spaces of opulence and low valued spaces of poverty and deprivation. Although the phenomenon of inequality is not new or unique to the South African context, it has become apparent that inequalities are being exacerbated by the advent of new ICTs and their increasing importance in social, economic, political and cultural processes.

This chapter found that the interrelationship between ICTs and social inequality forge new landscapes of polarisation within urban environments. The world city hypothesis provides useful insight into the ways in which these new social and spatial extremes are forged by new ICTs. However, the theory cannot be embraced uncritically without prior recognition of the influence of the histories that shape individual urban landscapes.

Chapter two also emphasised that ICTs are characterised by extending the power of the powerful; allowing affluent groups to selectively bypass

local poor spaces; and cultural and economical bias, which help forge inequalities in urban systems.

Residents living in “informationless ghettos” on the margins of the network society are “structurally” trapped by a cycle of poverty and information exclusion. They lack the necessary physical (let alone social) infrastructure to be involved in the electronic, global world. It is a characteristic of ICTs to bypass areas, regions and spaces that do not have the necessary “access capacity”, as presented in this chapter.

However, technological optimists and urban analysts do not see inevitable doom and gloom for the poor. This study also sees beyond the structural limitations of infrastructural capabilities and the market economy and advocates that the poor can advance their social and economic well-being by being incorporated into the digital world.

Sanyal (2000) pointed out that PCs are still too expensive for the poor to purchase. Despite this and other challenges discussed in the chapter, the potential benefits of ICTs for the poor are enormous. Without appropriate action from the state, and urban policy makers these potential benefits will remain potential benefits, and the urban poor will remain trapped in informationless “black holes”.

> ICTs are not a source of growing inequality and social exclusion. But their biased utilization by a dynamic…global capitalist system has triggered processes that seem to lead, around the world, to increasing social inequality in stark contrast to the promises of the Information Age.
>
> (Castells, 1999a: 9)

This study sees access to ICTs as a fundamental tool to finding new ways of alleviating poverty and exclusion faced by poor urban residents. How should the entry of “the urban poor” into the electronic world be facilitated? Individual household connections to new ICTs for marginalized residents

are an enviable goal. For the short term it would be less expensive and easier for “communities” to realise access collectively. The telecentres in South Africa show that communal access to ICTs accomplishes this. The next chapter will look into how “community action” can help alleviate this seemingly fixed state of affairs.

3 CONNECTING COMMUNITIES THROUGH COMMUNAL ACCESS

3.1 INTRODUCTION: WHY SHOULD COMMUNITY EMPOWERMENT BE IMPORTANT FOR THIS STUDY?

It is difficult to conceive personal ICT access on an individual household basis for developing countries and/or marginalized groups. The general consensus, among theorists and ICT policy makers, is that providing communities with shared facilities and services is a more feasible solution in attempting to realise "universal access" (Benjamin, 1997; Castells, 1999; Sanyal and Schön, 1999; Schön, 1999; Sanyal, 2000; Sigidi and Seti, 2000; Currin, 2002; Fors and Moreno, 2002; Pal, 2003; Ackerman, 2004; Rao, 2004; RSA Dept. of Communications, 2004).

The concern of bridging the digital divide and providing "universal access" through shared facilities insinuates the idea of the community computer (Sanyal and Schön, 1999; Rao, 2004). Many theorists and policy makers view this type of community development as a dynamic and interactive process of transformation[9]. "Community development…constitutes the source of significant and measurable improvement in various aspects of life and provides some degree of satisfaction" (Thioune, 2003: 15).

This has led some theorists to see "the community" as a useful abstraction, particularly with regard to the divergent and diverse character contemporary urban cultures and spaces assume (Barnett and Crowther, 1998). According to Barnett and Crowther (1998), communities are "…an element or level of social experience which cannot be ignored or done away with" and as such, it may be a concept that if done away with "…would surely need to be [re]invented" (*op cit*: 430 – emphasis added).

[9] This is the planning approach that the study is after, i.e., planning for social transformation (cf. Chapter 4)

Who is this “community”? And what goal does the notion of “the community” achieve in planning for or with urban (and rural) marginalized residents? The notion of “the community” has been pivotal to planning theory and practice since the establishment of planning as a profession. Planning thus saw a need to define “the community” so that it could plan for or with “this community”. Planning for or with the community involves locating communities in space.

In our contemporary world, in light of the advent of new ICTs, is the idea of a geographically bound community no longer valid? There has been a proliferation of literature arguing that we have multiple communities of interest, contrasting the traditional notion of “the community” bound by locality. ICTs have created a “cyber geography” that transcends traditional notions of space and time. Social interaction is now articulated in a ‘space of flows’ that, sometimes, renders physical proximity an insignificant measure of meaningful social connection and interaction (Castells, 1996; Sheppard *et al*, 1999).

This chapter will discuss the idea of “the community” within the background of “the network society” (Castells, 1996). The assumed relative homogeneity of social groups innate in the ideal of “the community” will be challenged with the diversity and multiculturalism that characterise contemporary societies. Finally, the idea of “community empowerment” will be introduced and examined in light of the “rise” of “the social network(s)” as the meaningful measure of social interaction and cohesion.

3.2 DECONSTRUCTING “THE COMMUNITY”: THE HOMOGENOUS GEOGRAPHIC COMMUNITY

> ‘When I use a word’, Humpty Dumpty said in a rather scornful tone, ‘it means just what I choose it to mean – nothing more and nothing less.’

> 'The question is,' said Alice, 'whether you can make it to mean so many different things'.
>
> (Milson, 1974: 1)

> When the term [community] is used in substantive debates about social and public policy it is never used in a neutral fashion. There is always going to be some normative and ideological engagement.
>
> (Plant, 1978 cited in Barnett and Crowther, 1998: 427)

According to the Shorter Oxford English Dictionary on Historical Principles (2002) a community is "an organised political, municipal, or social body", "a body of people having religion, profession, etc., in common", and also this body of people share "a sense of common identity". Milson defines community as:

> a social group, usually localized, in which there is manifest or latent, existent or potential, a sense of identification among its members…[it is] an understanding to be found in people's attitudes and thinking.
>
> (Milson, 1974: 11 – emphasis added)

Walmsley notes that to some, a 'community' is specifically,

> …a relatively homogeneous human population, within a defined area, experiencing little mobility, interacting and participating in a wide range of local affairs, and sharing an awareness of common life and personal bonds.
>
> (Dalton & Dalton, 1975 cited in Walmsley, 2000: 5 – emphasis added)

The 18th century German Sociologist's, Ferdinand Tonnies describes "the community" in his concepts of *Gemeinschaft* (which means community) and *Gesellschaft* (which means association) (McManus, 2001; and Gottdiener and Budd, 2005). These two concepts contrast ideas of traditional, holistic, territorially based usually rural communities (*Gemeinschaft*) with those of fragmented, contractual, industrialized ones (*Gesellschaft)* (*cf. Table 3.1*). This dichotomy continues to influence contemporary analyses and understandings of community.

Table 3.1: Tonnies' *Gemeinschaft* and *Gesellschaft*

Gemeinschaft	*Gesellschaft*
Place	Interest
Organic	Functional
Primary groups	Secondary groups
Shared values and world view – given	Shared values as a result of functional co-operation
Identity of interests fixed	Differentiation of interests
Conservative	Mobile
Holistic/total	Fragmented; specialist
Co-operative	Contractual
End	Means
Traditional	Modern
Oral communication	Written communication

Source: Taylor, 2003: 37

Most definitions and descriptions of "community" are based on the premise that a "community" is place-based. In other words a "community" is a "…uniform whole within a territorially defined boundary" (Barnett and Crowther, 1998: 428). However, some challenged this notion of a spatial community, arguing that the accomplishment of social relations does not necessarily require spatial proximity.

3.3 DECONSTRUCTING "THE COMMUNITY": 'A COMMUNITY WITHOUT PROPINQUITY'

> Physical distance no longer signifies meaningful connection, as is implied by the 'first law of geography' – namely, that nearby things tend to be more connected. Far-distant nodes, spaces, and places…can be drawn together into intimate exchange with each other across the planet with the help of ICTs.
>
> (Sheppard et al, 1999: 805)

In 1963, Melvin Webber argued that the localised idea of a community would inevitably be worthless because social interaction is increasingly becoming based on networks of interest rather than locality (Walmsley, 2000; Gottdiener and Budd, 2005).

According to Webber, we would reach a point where social interaction will no longer be based on geographic proximity, but on common interests, binding people together socially while allowing them to be physically free (Barnett and Crowther, 1998). Walmsley summarises Webber's idea saying that,

> Communities might be spatially far-flung, but nevertheless close-knit, intimate and held together by shared interests and values, rather than by geographical proximity.
>
> (Walmsley, 2000: 1)

Webber argued for 'a community without propinquity'. It is interaction (and today this interaction is heightened through ICT access), not place, which will become the essence of urban life (Walmsley, 2000).

Whichever way we look at these definitions and explanations, communities are essentially identified as a group of people who share a common interest, be it in cultural relations, social interaction, economic relations or experiences of power and oppression (Taylor, 2003). This is true for members of communities within the same geographic area as it is for those that are linked electronically, or otherwise.

Contemporary urban societies are increasingly characterised by the accomplishment of a multifaceted set of activities linking people in their social, economic and public lives (Healey *et al*, 1997). Social relations are increasingly being mediated through new ICTs that disregard distance. This has led some theorists to suggest the "death of distance" (Cairncross, 1997), and "contrasts with the idealised image of place based, largely rural

self contained community, encapsulated in the notion of Gemeinschaft" (Healey *et al*, 1997: 2).

3.3.1 "The Network Society"

For Castells (1996) space and time are the two fundamental material dimensions of human life. He sees space and time as expressions of society, and ICTs have transformed these expressions to create "the Network Society".

It has become common to assume that new advanced ICTs undermine the need for face-to-face, localised social interaction. The Internet, for instance, can connect two distant points anywhere in the world in real time. Nonetheless, some maintain that new ICTs facilitate localised social interaction rather than undermine it (Castells, 1996, 1999a/b; Hall, 1999; Prud'Homme, 1989). Unlike earlier technologies such as the telephone,

> the development of electronic communication and information systems allows for an increasing disassociation between spatial proximity and the performance of everyday life's functions: work, shopping, entertainment, healthcare, education, public services, governance, and the like.
>
> (Castells, 2002: 329)

This statement captures the essence of Graham's (2002b) ICT characteristics that "bypass the local" (cf. *chapter 2*). Still, according to Castells (1996) this does not imply that in the near future cities will be voided of their functional necessity as arenas of intense population concentration.

The world's urban population will double by 2025 (Andrieu, 1999). According to the UN-Habitat (2001), 84% of the population in developed countries will be living in urban areas by 2030. Latin America and the Caribbean were 50% urbanized by 1960 but are now in the region of 75%.

Africa is the continent with the fastest rate of urbanisation with a growth rate of 4.87%.

“Local disconnection” does not translate to non-existent spatially based social interaction. As discussed in chapter 2, the global economy is organised around command and control nodes that, through ICTs, can coordinate and manage the intertwined activities. It is the distinctive feature of being globally connected and locally disconnected that makes metropolitan regions a new urban form (Castells, 1996).

Castells (1996) sees contemporary society, “the network society”, as constructed around flows: flows of capital, information, technology, organisational interaction, images, sounds and symbols. These flows are not just one element of social interaction but they are the ‘expression’ of a process dominating our economic, political, and symbolic life (Castells, 1996, 2002). Castells calls this “the space of flows” (1996).

Chapter 2 established that one of the constituting elements of the space of flows[10] is its nodes and hubs of command and control. This suggests that the space of flows is not “placeless”. The intention of this discussion is not to disqualify the need and importance of space in society, and social interaction. The space of flows links up places that have well defined social, cultural, physical and functional characteristics (Castells, 1996). People still live in places.

Places, however, do not necessarily constitute a spatial community. Not all residents who live in a particular place share a common identity, for example. For Castells (1996) powerlessness is, more often than not, expressed in the “space of places”. This expression would suggest a role for community-based action through community-based empowerment. I will return to this discussion later in the chapter.

[10] Here, the space of flows (electronic spaces) facilitates interaction between the global nodes of the world economy

Places are thus needed for people to live in, and places have physical boundaries. Even though this does not imply that places are communities, places may contribute to community building. For the purpose of this study, "community" suggests some degree of shared interests among community members (including shared powerlessness).

And because the aim of this study is to uncover whether access to ICTs empowers marginalized urban residents, I will need to spatially locate marginalized communities. This locating will, nonetheless, recognise that communities and individual members of a spatial community are diverse.

3.3.2 The (South African) State's Community

In many developing countries, the role of ICTs towards economic and social development receives little attention (Bayes, 2001; Pal, 2003; Sebusang and Masupe, 2003; Rao, 2004). India, by contrast, can teach other developing countries about the potential benefits of ICTs for poor residents. In India there has been a number of strategies aimed at connecting communities to the electronic world via communal access points to the Internet (*cf. chapter 5*).

Providing ICT infrastructure in South Africa has largely been undertaken through the state via the Universal Service Agency's (USA) Telecentres located in Multi Purpose Community Centres (MPCCs). The Universal Service Agency was established under the Telecommunications Act (no. 103 of 1996) to "encourage, facilitate and offer guidance in respect of any scheme to…provide universal access or universal service" (S 59 (b) (i)). Currently, the USA functions under the Telecommunications Act as amended in 2001 (Telecommunications Amendment Act No. 64 of 2001). Its mandate of providing universal service has not changed.

The Department of Government Communications and Information Systems (GCIS) sees the role of MPCCs as “physical nodes” within which communities can access telecommunication services and engage in government programmes for their own empowerment (GCIS, 2001). The GCIS and the Department of Communications (DOC), amongst other national departments like the Department of Trade and Industry, have been mandated to become active and responsible role players in this regard.

Chapter 5 will discuss how and what these MPCC have done thus far. For the purposes of this discussion, most MPCC have been located in poor areas, so that “poor communities” or “under-serviced areas” can have access to telecommunication services with the aim of empowering “the poor”.

Thus, economically stressed areas/neighbourhoods/suburbs, and the residents of these physical spaces, have been identified by the state as a spatial entity. In addition the state uses the same model of ICT provision throughout South Africa. It follows that the state sees a localised, homogeneous and geographically bound “community”.

The next section will discuss how the planning profession, since its inception, also views “the community” as a localised entity and how this has influenced the profession’s view of difference.

3.3.3 Planning’s community

Planning generally views communities as space bound (McManus, 2001). Foley (1973) sees urban planning as “…providing the physical basis for better urban community life” (78). Foley also argues that one of the ideals of planning is “the fostering of local community life” (*ibid*). This would be achieved through “building upon the traditional form and social

organisation of the village" (*op cit*: 82). The nostalgic ideal of the *Gemeinschaft* community is seen here as the ultimate desirable ideal of social organisation.

I am not going to venture into a long deliberation of planning theory. However, I wish to illustrate the manner in which planning has been preoccupied with defining and designing the ideal community, evident throughout the profession's history.

Although the planning of cities can be traced back to Ancient Greek times and the Roman Empire, it was during the "Enlightenment" that emphasis was placed on scientific knowledge, empirical enquiry and the idea of acting on the world to improve it that laid the foundation for urban planning to transpire as a profession.

The squalor of working class living conditions during the Industrial Revolution in Britain (and later in the United States) brought many to envisage utopian ideals of the "better community", like Titus Salt's "Saltaire", Ebenezer Howard's "Garden City" and Clarence Perry's "Neighbourhood Unit" concept, for example. Establishing a community where people would have a "better life" was to be achieved through comprehensive plans. In Britain these plans were called master plans, and in America the ideal was encapsulated in the Radburn Plan and "City Beautiful" movement.

Although planning went through a number of changes, the notion of comprehensive planning was held with high worth until the 1960s/1970s (Faludi (ed.), 1973,). Patrick Abercrombie's "Greater London Plan" was a clear indication of the significance of this ideal in the years after World War Two. The goals of comprehensive planning were:

- To create a master plan which can guide the deliberation of specialist planners,

- To evaluate the proposals of specialist planners in light of the master plan, and
- To coordinate the planning of specialist agencies so as to ensure that their proposals reinforce each other to further the public interest.

> Each of these functions requires for ideal performance that the comprehensive planners understand the overall public interest…and that they [planners] possess casual knowledge which enable them to gauge the approximate net effect of the proposed actions on the public interest.
>
> (Altshuler, 1973: 193 – emphases added)

During the 1960s, the rational comprehensive planning model (RCP), characterised by a strict separation of values from facts (see Davidoff and Reiner, 1973) emerged as the dominant model for planning action. It involved the identifying of appropriate means towards attaining specified ends. However, other developments challenged this rational model, mainly with regards to its comprehensiveness (Davidoff and Reiner, 1973; Etzioni, 1973; Lindblom, 1973).

Planning's "communicative turn", since the mid 1990s, (Healey, 1995, 1997; Forester, 1999; Verma and Shin, 2004) introduced the idea that communities are different and consist of individuals with diverse interests. Communicative planning emphasised that:

- The communication of knowledge takes many forms, from scientific analysis to story telling, pictures, sounds and symbols.
- The idea of "the public" interest is unfounded as people have diverse interests and expectations.
- Public policy should be concerned with managing co-existence in shared spaces.
- Planning action is embedded in social relations, and thus context and practice are socially constituted together.

(Healey, 1997: 29-30)

Above all, the “communicative turn” seeks public involvement in the (state’s) planning process. It does this through concepts like consensus building in public decision-making (Healey, 1995; Innes, 1996). The difference from master and comprehensive planning is that contemporary planning theory acknowledges that people have different interests. Through communicative planning practices planners try to reach consensus with diverse stakeholders instead of telling “the public” (or “the community”) what they should do. As such, planners acknowledge that although places may contribute to community building these places do not necessarily constitute a community.

In the network society, interaction occurs in a discontinuous fashion across space that includes some (the rich) and excludes others (the marginalized). As much as planning action happens in physical locales, equally, the challenge that multiculturalism and the network logic bring to presumptions of the geographic community needs to be taken into consideration.

3.4 THE NEED FOR PLANNERS TO RETHINK “COMMUNITY”

I want to clear some misunderstandings that might arise with what has been discussed hitherto. This study is not arguing that we should not plan for intercultural diversity or establish communal support for poor urban residents. It also does not mean to argue that a shared interest within spatially bound households is impossible. However, it does mean to emphasise that the ideal of “the community” creates a relative homogeneous understanding of a group of people residing in the same area without acknowledging difference and multiculturalism. This distorts our purpose of achieving equality and democracy, recognition and respect for difference. It creates “the other”.

In *Designing with Diversity: the Satanic Verses as Design Manifesto on the Age of Migration*, Sandercock (2005) asserts that there is the irreversible reality of multicultural, multiethnic, and diverse cities. This report wants to capture this reality by arguing that the ideal of "the community" is paternalistic and demeaning in that it seeks to create a doctrinaire comfort of a self-enclosed whole in "the community".

It has been argued that even though it is elusive to define, community still addresses an element of social experience that cannot be ignored or done away with (Barnett and Crowther, 1998). It is true that the concept of community suggests a sharing of a common interest amongst a particular group (Barnett and Crowther, 1998). However, we should be cautious as the ideal of "the community"/"the public" denies difference, separateness, and expresses a longing of harmony among persons (Young, 1995).

It has also been argued elsewhere (Gottdiener and Budd, 2005) that those who emphasise the "spaceless" manifestations of social interaction and the 'hypermobility' of ICTs inclines planners to a state of powerlessness with regard to community planning. However, social relations do not inevitably harmonise with spatial relations:

> One does not necessarily socialize with one's neighbor because they are handy [and close], nor does distance in itself preclude the maintenance of important social ties. And out of the wider array of individuals from which one *could* select one's friends and associates, one has at least the potential to become very choosy, finding those with whom one shares highly specialized interests, rather than those with whom one shares residence or even kinship ties.
>
> (Abu-Lughod, 1994: 186)

Furthermore, appeals to "the community" are often "anti-urban" (Young, 1995). It is particularly the ideal for the *Gemeinschaft* community that envisage harmony amongst persons that reinforces this anti-urbanity. "The community" is often confined to assume the relative homogeneity of a

spatial, localised group. This relative homogeneity is assumed in a group as, for instance, the African American community who live in inner city "ghettos" (the urban villager in table 3.2). There has been increasing recognition that what really exist are communities that occupy the other three cells of table 3.2.

Table 3.2: Community in the Matrix of Scale and Space

Physical Space	Social Space: Homogeneous Small range	Social Space: Diverse Wide Range
Small Range	Urban Villager, "Ghettos" Old Age Homes Public Housing Projects	East "Village" Mixed-Income areas
Wide Range	Army foot soldiers Jet setters Foreign service officers	Mel Webber's *Nonplace city* Computer networks at random

Source: Abu–Lughod, 1994:184

Communities are diverse and their members have interests that are diverse (Taylor, 2003; also see Abu–Lughod, 1994; Flyvbjerg, 1998; Flyvbjerg and Richardson, 2000; Sandercock, 1998, 2005; Yiftachel, 2001), and as a result there are a number of conflicting notions of "the community". Hillary, in 1955, found over 94 different definitions of "community". Their only common denominator was that they all dealt with people (Barnett and Crowther, 1998; and Taylor, 2003).

This report wishes to stress that the consequence of planning for an assumed homogeneous community "…is that it often operates to exclude or oppress those experienced as different" (Young, 1995:260; also see McManus, 2001). Yiftachel (2001) sees planning as a "double-edged sword" that can be used by societal powers either constructively or repressively.

Urbanisation creates multicultural spaces. The global nodes of the world attract large numbers of people from within and outside of their national boundaries. The notion of "the community", in this context, promotes the myopic notion of completeness usually based on race, ethnicity, culture, etc (Sandercock, 2005). This is an important flaw, to note, of space bound descriptive notions of "the community" (and communities of interest).

Taylor (2003) says that even within communities of shared interests, there are bound to be overlapping and different interests. Individuals, in fact, belong to multiple communities. Taylor sees communities as descriptive, normative and/or instrumental entities. She identifies three general senses in which the notion of community is used, namely:

- Descriptive community as a group or network of people who share something in common or interact with each other;
- Normative community signifying a place where solidarity, participation and coherence are found; and
- The instrumental community which can be an agent acting to maintain or change its circumstances and /or a location or orientation of services and policy interventions.

(*op cit*: 34)

In everyday speech, we use the word 'community' to describe a wide variety of social units (Milson, 1974). Hasley, in 1974, said, "community has so many meanings as to be meaningless" (Barnett and Crawther, 1998: 427). Also, the need to belong to a community and identifying oneself with a group involves an implicit alienation of "others" (McManus, 2001). Indeed, this is also true for information communities as well.

Planning action often happens in localities with specific boundaries. Planning should engage in actions that acknowledge the authenticity of difference and diversity amongst residents. Most importantly, planning should recognise the realities of diversity and multiculturalism if it is to achieve "social transformation".

3.5 HOW SHOULD PLANNING/ICT POLICIES RESPOND TO THESE REALITIES?

As planners we need to rethink the concept of "the community". It has been argued that planners should plan with communities towards intercultural diversity (Sandercock, 2005). I will now outline the reasons for this.

First, planning theory has to be commended for its recognition of difference and diversity amongst persons. Sandercock's multiculturalism has been influential in this regard (1998; 2003; 2005). Young (1995) also makes a valid argument: if city politics are to be democratic, they should not be dominated by the point of view of one group, but should include the voices of different groups that dwell together in the city without necessarily reducing them into "a community". This, some might argue, is the essence of multi- and interculturalism.

Sandercock (2005) notes that multiculturalism can tend to be demeaning and paternalistic by creating an urban form in which each ethno-cultural group huddle in their own neighbourhood, using their own specially designed services and spaces, and not interacting with other groups in the multi- and intercultural city. She proposes a new hybrid city that is home for all, where no one culture is dominant but each culture learns from and contributes to creating something entirely new. This something "new", in turn, may lead to individual and collective empowerment as different groups and individuals become involved in urban governance.

This chapter has shown that people no longer necessarily have strong links with only their immediate neighbours, but can have stronger friendship and family networks outside of their immediate surroundings (Bremner, 2004). Madon and Sahay (2001) argue that globalisation has

created a situation where people living in the same areas have a relationship characterised by "disconnected contiguity". Meaning that as people inhabit orbits of social life, their lives can intersect at the locality they occupy without interfering with each other (*op cit*: 274)

Although "the concept of time and space in the modern era have allowed social activities which transpire in any one locality to become disconnected from each other" (Madon and Sahay, 2001: 275), this relationship between simultaneous globalisation (the space of spaces) and localisation (the space of places) is not predetermined (Castells, 1996).

Although ICTs are creating flows between powerful people involved in global economic activity, they also create physical spaces of exclusion characterised by powerlessness and localised interaction (*cf. chapter 2*). Madon and Sahay speak of "place consciousness", arguing for:

> …the recognition that however "off-ground" globalisation may appear, most of the transactions of economy activity are conducted in places, which are subject to place-based contingencies and considerations.
>
> (Madon and Sahay, 2001: 273)

Sassen (2004) argues that cities around the world are the places where globalisation is constituted. These localised forms of global processes are essentially what globalisation is about. Urbanisation, for instance, is a localised process and has been one of the major urban issues of today. However, "what exist are networks of relations, some of which are influenced by global processes and some of which are grounded in local practices – each affecting the other" (Madon and Sahay, 2001: 281).

Sassen argues, the spatialisation of power, or globalisation, in cities and metropolitan regions is found in:

- The segregation of population groups that are produced and reproduced as cheap labour,

- High income or residential gentrification that leads to the inevitable displacement of lower-income households, and
- The destruction of natural environments for real estate development (Sassen, 2004)

It has already been argued that ICTs perpetuate socio-spatial patterns of inequality. This is achieved through excluding those who do not have the resource, skills, education, etc, to access ICTs from the mainstream social, economic, political and cultural processes of the network economy. Would access address these conflicting rationalities of ICTs and urban inequality?

Sanyal and Schön (1999: 377) noted, "even if access [to ICTs] is provided, it is unclear whether it will be enough to integrate them [marginalized residents] into the nation's mainstream economic, political, and social life". The experience in visiting telecentres for this study shows that this elusiveness is real.

Sandercock (1998) stressed the need for sensitivity to "the multiple forms of oppression and domination and exploitation that exist in any society" (86). She argued that "the poor" and "the oppressed" are not a homogeneous mass, but are diverse and "speak in many different voices" (*ibid*).

This chapter has established that "the community" is no longer the only plausible instrument of social cohesion and relations, particularly when the community is conceived purely on a spatial basis. At the same time, the study acknowledged that locating "the community" is necessary if some kind of empowerment/social transformation is to be realised. However, this locating of "the community" should recognise diversity.

> People still do live in places. But because function and power in our societies are organized in the space of flows, the structural domain of its logic essentially alters the meaning and dynamic of place…Unless cultural, political, and *physical* bridges are deliberately built between these two forms of space, we may be heading towards life in parallel universes whose times cannot meet because they are warped into different dimensions of a social hyperspace.
>
> (Castells, 1996: 458–459)

The accentuation of the conflict between the space-less manifestation of social relations, assisted by new ICTs, and the articulation of power in geographic space (Castells, 1996; Sassen, 2004) makes planning action complex. Hence, this study seeks a planning approach that recognises difference and diversity in localised communities.

Acknowledging the competing debates around planning, it is within a debate of planning that embraces the role of the state and community organisations toward social transformation that this study will be located (Castells, 1978; Friedmann, 1987; Healey, 1997; Sandercock, 1998, 2003, 2005; Rangan, 1999; Beard, 2003; Winkler, 2005).

Within this framework a language of empowerment, collective action, and social transformation is embraced. My interest in "planning for social transformation" theory is its extension of planning action from planning practitioners to include civil society organisations, the state, and ordinary people (Winkler, 2005). When the different spheres of government, civil society organisations, private sector institutions and ordinary people collaborate to achieve meaningful access, some kind of empowerment may be accomplished.

Mutual learning is imperative to achieving effective collective action. Within the framework of planning for social transformation, knowledge is obtained through a process of mutual learning where stakeholders inform each

other and the goal of planning is the structural transformation of powers that maintain oppressions endured in society (Friedmann, 1987, 1999; Sandercock, 1995, 1998; Rangan, 1999; Beard, 2003).

How appropriate is such an approach in South Africa contexts? The South African national government is already engaged in implementing ICTs through telecentres. The private sector has also implemented initiatives that seek to "give far-flung communities access to markets" (*cf. appendix C*). Chapter 5 will provide more detail on how the state's telecentre projects only reach those who can afford. Nonetheless, collaboration between telecentre operators and private sector agencies implementing their ICT projects can contribute in bridging this gap.

This issue in this chapter is not about place-based communities *per se*, but rather the issue is with a homogenous understanding of "the community", i.e., recognising difference without exclusion.

3.7 CONCLUSION

Deep divides exist between those who have resources, education and skills and those who do not in accessing and reaping the benefits of new ICTs. These divides are generally drawn along lines of racial and ethnic, disability, age, income, educational attainment, and geographic location (Servon, 2002). However, ICTs can be a tool used towards improving the social and economic well-being of marginalized urban residents.

In addition, this chapter has shown that the concept of "the community" is extremely elusive therefore difficult to define. Nonetheless, defining the subject for any endeavour, such as planning, is critical in realising effective action. For this reason the study examined the "space-less" manifestations of contemporary social interactions and networks found in current literature debates.

In the process, however, the study discovered that the aspect of geographic location, as an identifying factor of “the community”, must be considered in order for some kind of empowerment to take place. Henceforth, although “communities” are made up of divergent interest groups and individuals, they inevitably at times share a common interest on a particular issue. It follows that even when considering “spatial communities” as the arena where empowerment takes place, the diversity of communities should always be acknowledged.

Thus this leads me to ask: how are ICT strategies used to empower “communities”/poor urban residents? It is generally agreed that the uplifting and inclusion of the excluded in the electronic world would be difficult to achieve through personal access particularly for developing countries. Communal facilities are generally seen as the answer. Collaboration and an appreciation of mutual learning should guide such activities.

4 ICTS AND EMPOWERMENT

4.1 INTRODUCTION: COMMUNITY EMPOWERMENT

Locating “the community” in space was found to be useful, as it not only insinuates a sharing of interests amongst people, but also allowes for some kind of empowerment to take place through recognising that people can act collectively when they share an interest. Even so, facilitating ICT access through such a mode requires caution, as “the community” tends to imply homogeneity amongst people who are different.

The previous chapter also introduced the notions of collaboration and mutual learning as keystones to achieving such actions within the framework of the realities discussed. The aim of this chapter is to explore the idea/concept of empowerment in general, and the role of implementing ICTs towards “community empowerment” in particular. This chapter will deliberate on the various conceptions of empowerment in planning.

4.2 WHAT IS EMPOWERMENT?

“Empowerment” as a concept, as Osborne (1994) put it, is vague. It means a number of different things to different people, and is thus open to a number of different interpretations. This section will look into the concept of empowerment and then establish a generic idea of what empowerment ought to mean for planners.

For Osborne (1994) “empowerment” has different meanings to different social actors. From a neo-liberal/market perspective, empowerment can mean introducing market forces into, say, the Health Service. Who is “empowered” by this market economy approach? Is it the state that gets

empowered by delegating some of its responsibilities to other sectors (like the private sector)? Or is the service provider through this deregulation?

Fors and Moreno (2002) see empowerment as "enabling weaker, excluded and powerless citizens to gain or regain power over their lives" (201). For example, people participating in decision-making and development processes, accessing information about employment opportunities, market prices[11] and government programmes that enhance empowerment. In essence, Fors and Moreno (2002) see empowerment as the inclusion of peripheral, excluded communities in local political processes.

Arnstein's "Ladder of Citizen Participation" has dominated scholarly work with regard to the levels of empowerment (*cf. Table 4.1*). Her eight-step ladder moves us from powerlessness (manipulation) through consultation and partnerships to citizen control. Other authors have used this similar approach of identifying citizen participation through stepped ladders (Taylor, 2003).

TABLE 4.1: SHERRY ARNSTEIN'S LADDER OF PARTICIPATION

Degrees of citizen power	Citizen control
	Delegated power
	Partnership
Degrees of tokenism	Placation
	Consultation
	Informing
Non-participation	Therapy
	Manipulation

Source: Taylor, 2003: 117

The flaw with these approaches to identifying ideals of levels of empowerment is that the ladder is static. It tends to oversimplify distinction

[11] See Appendix C

between participants and outsiders. It assumes an ideal form of participation where “everyone” participates, and it ignores the diversity of communities by treating them as homogeneous wholes (Taylor, 2003: 117; *cf. chapter 3*).

Jackson developed an alternative model to Arnstein’s ladder (Taylor, 2003). Her model shows that participation should aim at collaborative, shared decision-making. This concept is also encapsulated in Sandercock and Friedmann’s work on social transformation. More so, Jackson sees her model not as a ladder *per se* but a spectrum of citizen involvement (*Table 4.2*).

TABLE 4.2: JACKSON'S STAGES OF PUBLIC INVOLVEMENT

Degree of involvement ▼

Set Objectives	For Whom?	Characteristics
Informing	For those who are uninformed about an issue	One-way communication
Public education	For those who are aware of the issue but not of its technicalities or implications	
Testing reaction	For those who are progressively more informed	Two-way communication, consultation
Seeking ideas and alternative solutions		
Seeking consensus		Shared decision-making

Source: Taylor, 2003:119

The crux of Jackson’s model is that different kinds of involvement are appropriate for different stakeholders. This model takes into account the different levels of knowledge within communities and this will guide at

which stage, in the spectrum of involvement, participants are to be involved in the planning process (Taylor, 2003).

The latter is supported by Beard's (2003) argument that community empowerment, or the process where citizens gather the knowledge and skills that prepare them for more "radical planning", happens through citizens partaking in state orchestrated programmes where they learn the skills and knowledge for "community-based" planning.

Through this rather simplified account, empowerment can be seen as a process where participation is vital to its achievement. But all these models (or theorists) still hold on to a notion that citizens need to be involved in the planning process and this involvement is only facilitated by the state. Sandercock (1998; 2003), Friedmann (1999), Harvey (1999) and Castells (1985; 2002), however, argue that citizens have to empower themselves.

In addition, citizen control and ownership over decision-making and development processes are the general desirable outcomes of the empowerment process. Urban planning has adopted this model of empowerment where citizen involvement and/or control are essential.

The empowerment described above sees stakeholder inclusion, involvement and participation as fundamental to achieving "empowerment". The lens through which "empowerment" is described, i.e., neo-liberal/market, etc., defines who gets empowered. This study defines empowerment through a lens of transformation, grassroots development and communities taking power for themselves. This chapter intends to voice this kind of empowerment.

4.3 PLANNING AND EMPOWERMENT

For John Friedmann (1987), planning refers to the deliberate transfer of knowledge to action in the public domain. In his book, *Planning in the Public Domain: from Knowledge to Action,* Friedmann (1987) identifies four broad forms of planning: planning as policy analysis, social learning, societal guidance and social mobilisation.

Only planning as societal guidance and planning as social transformation will be discussed in this chapter. The former is articulated through the state whilst the latter is concerned with transforming the structures that maintain the oppression and exclusion of urban communities, from within "the community".

> Planning as social transformation can be understood as efforts that occur on a variety of scales to transform the social, political, and economic structure that create and maintain the status quo. To date most well-known examples of radical planning have occurred at the community level.
>
> (Beard, 2003: 16 – emphasis added)

According to Friedmann, planning that is concerned with structural transformation is "radical planning". Friedmann (1999) sees radical planning as concerned with the emancipation of communities from social oppression by the state and/or market forces. Similarly, Sandercock thinks social transformation should be more concerned with empowering marginalized communities, however she also emphasises the emancipation of those viewed as "different" (1998; 2003).

According to Sandercock's empowerment model:

> Planners help communities find practical solutions, understand institutional constraints and provide the intelligence necessary to develop successful strategies…the radical planner also guards against the

> tendency for power and information to be consolidated in a small decision-making elite, by ensuring the broad participation of community members.
>
> (Beard, 2003: 17)

The issue here is that communities need to take control and planners become secondary to this project of "empowerment". What is idealistic is not the idea that communities can empower themselves, but that planners can guard against the tendency of the powerful to rationalise decisions through discourse so that they can satisfy their interests.

Sandercock (1998) argues that "planning for social transformation" emerged as a response to a variety of oppressions based on race, gender, socio-economic status, ethnicity, etc. The aim of her model is to "work for structural transformation of systematic inequalities and, in the process, to empower those who have been systematically disempowered" (*op cit*: 97).

The difference to Friedmann's model is that Sandercock's "radical planning" begins with small actions which she calls "a thousand tiny empowerments" (1998). The focus of "radical planning" will depend on the character and circumstances that maintain oppression. The transformation of these inequalities can only be achieved through the community and/or civil society (*figure 4.1*).

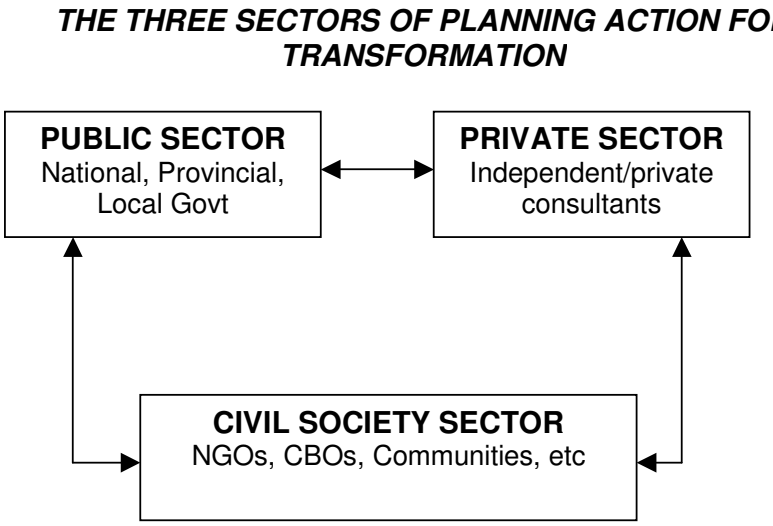


Figure 4.1: The Three Sectors of Planning Action for Transformation

According to Friedmann and Sandercock, the distinctiveness of "radical planning" from other forms of planning is its oppositional element, but they both state that "radical planning" does not always have to be oppositional. Thus they acknowledge that the state is also not always oppressive.

Friedmann (1987) noted that social advances achieved through a "radical planning" that bypass the state would quickly reach its material limits (also see Rangan, 1999: 49). Sandercock also noted that,

> There is an unresolved, and unresolvable tension between the transformative *and* repressive powers of state-directed planning practices, *and* their mirror image, the transformative *and also* repressive potential of the local, the grassroots, the insurgent
>
> (Sandercock, 1998: 102)

By this Sandercock acknowledges that although they are at opposite ends of the continuum, both the state and local civic organisations have the power to be transformative and repressive. In other words, she acknowledges that "radical planning" can happen through the state, but

equally so, repressive planning can also happen through the community sector[12].

Thus far, the planning theory discussed sees the goal of self empowered residents. Empowerment is thus ultimately judged by how knowledgeable communities are to embark, by themselves or through civil society, on empowerment practices. In the South African context, where we have a young democracy and a civil society that is still trying to reorganise itself after 1994, planning for social transformation needs to be in collaboration with the state (Winkler, 2005).

Instead of trying to attain the ultimate goal of the informed community, planning should be a learning process for all stakeholders (mutual learning). Here, stakeholders are taken as (national and local) government, the private sector, civil society organisation (the telecentres) and people who are going to use ICTs. Their participation in the empowerment process varies according to the need for their involvement (*cf. chapter 3*).

Local residents have knowledge and skills that "differ" to those of planners and civil society organisations. When various actors come together, they can share knowledge and skills that can lead to some kind of empowerment through collective action. Here, the role of the private sector should also not be overlooked.

The next section will look into the importance of the notion of collaboration (between public, private and community based organisations) in ICT empowerment strategies in the South, especially in South Africa.

[12] See Sandercock (2005) where she speaks of the public sector designed and initiated a collaborative sort of planning that engaged with the community to produce an "intercultural city" [in Vancouver, Canada]

4.4 EMPOWERMENT THROUGH INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs)

Chapter 2 discussed how the increasing use of ICTs in mainstream economic activity accentuates existing socio-economic and spatial inequalities within and between regions. It also highlighted the potential of ICTs to empower. States view the implementation of ICTs as having the potential to narrow the poverty/digital divide.

Although access is a fundamental precondition to lessening the digital divide, access does not necessarily guarantee that the end user will benefit from the information society (Sanyal and Schön, 1999; Schön, 1999; Fors and Moreno, 2002; Graham, 2002b; and Servon, 2002). "Access" goes beyond mere connection to ICT infrastructure like the Internet (*cf. chapter 2*).

> Children in poorer school districts tend to use computers and the Internet for less sophisticated application than do children in wealthier districts... [T]hose who use computers and the internet for lower order tasks, such as word processing, do not benefit from the information society in the same way as those who use IT for higher order tasks, such as analysing information and design
>
> (Servon, 2002)

In addition, cost and affordability of hardware and software, education, the relevance of information access to user's needs, language, etc, are some of the caveats regarding access.

4.4.1 Issues of Access in the Global South

Bayes (2001) notes that many developing countries' policy makers do not appreciate the possible benefits of ICTs in development. He notes that asymmetry in the realm of information is one of the principal causes of inequality. Henceforth, the lack of access to information is a powerful factor in the perpetuation of poverty.

Rao (2004) also notes, "information is key to democracy" (pg 261). ICTs have the potential to alleviate poverty and generate employment. Without access, opportunities that ICTs enable will not be realised. Rao sees the major constraints to access in developing countries as being the:

- Lack of awareness regarding the benefits of ICTs,
- Lack of access to facilities,
- Language barriers,
- Lack of local language information products,
- Non-availability of government information, and
- Lack of motivation to use ICTs.

(Rao, 2004: 262)

The "globalisation" of Africa has been characterised by inaccessibility and uncertainty on how the informational city intersects with livelihood strategies of people living in cities in Africa. In such developing regions, a large proportion of the population do not see ICTs as important to their everyday survival mechanisms. Urban poor residents in the South don't need ICTs! Rather, they need opportunities to engage in economic activities, improve their nutrition and easily access health care, healthy living environments, quality education and other components of a "rewarding sustainable livelihood" (McNamara, 2003).

Still, to the extent that they can help in achieving these goals, ICTs become worthwhile tools of empowerment. Hence ICTs are seen here as tools, rather than goals.

However, in the contemporary city, the socio-economic future of economically stressed urban residents somewhat depends on the availability of technological and other relevant infrastructures that facilitate access to opportunities offered by new ICTs (Bayes, 2001; James, 2001; and Rao, 2004).

4.4.2 Access in South Africa

The South African government sees the ICT sector as key to the development of all other socio-economic sectors in the country (Naidoo, 1998). The national government has taken on the role of facilitating access to ICT infrastructure and services in historically disadvantaged areas, through the Universal Service Agency (USA) (2005).

The telecommunications white paper and Act lay a foundation where the regulatory, operational and policymaking functions of telecommunications are separated. Currently, the Independent Communications Authority of South Africa (ICASA) regulates the industry, the USA functions as the operational body with the mandate of providing “universal access” and the Department of Communications (DOC) deals with policy matters.

The USA telecentres are located either within Multi-purpose Community Centres (MPCCs), like the Batho Pele Telecentre in Thembisa, or variety of locations within under-serviced localities, i.e., Siyabonga Telecentre in Orange Farm. The telecentres operate as non-profit entities with the aim of bringing telecommunications facilities to the broader population.

4.5 CONCLUSION

Empowerment includes peripheral, excluded communities in local political process of decision-making. It also entails some kind of shared, collaborative decision-making process that involves various stakeholders. Involvement, participation, and collaboration are imperative in the empowerment process.

Also, empowerment through ICTs has been generally seen as providing infrastructure that facilitates access. However, the lack of awareness regarding the benefits of access, the lack of access to ICTs and the lack of content that is relevant to local needs are some of the barriers that confirm that empowerment is more that merely providing access. As such, social transformation in South Africa needs, at some point, to be in collaboration with the state.

The next chapter is going to look at some of the ICTs initiatives in India that illustrate that empowerment goes beyond “logging on” to a computer. South Africa’s telecentres will be compared to these initiatives so as to find out the extent to which ICT initiatives in South Africa empower poor urban communities for grassroots development.

5 ICTs FOR DEVELOPMENT IN THE GLOBAL SOUTH

5.1 INTRODUCTION

Graham (2002b) noted that ICT use is culturally and economically biased (*cf. chapter two*). The cost of ICT infrastructure and illiteracy are the two most common impediments to access in the developing world. Chapter three proposed a communal access model aimed at addressing the issue of cost. Collaboration and mutual learning were pivotal elements identified in achieving effective access.

Generating knowledge and information, through ICTs, that would be relevant to particular contexts would ensure an even broader involvement and participation from the poor populace.

This chapter will look at Indian case studies that are renowned for their achievement in using ICTs to empower economically strained groups. The lessons drawn from these studies will be compared to telecentres that are considered successful. This chapter argues that people need ICTs to advance their social and economic well-being.

This chapter will commence with a brief introduction on some of the major issues, regarding access to ICTs, facing developing countries. Then the discussion of three Indian case studies will follow. Next, some of the lessons that can be gained from these for a South African context will be highlighted. The chapter will close with a look into the researched areas undertaken for this study. These will be assessed against the lessons learned from the previous section.

Box 5.1: Breaking Barriers to Internet access

The World Wide Web is too expensive for millions of people in developing countries, partly because of the cost of computers that are standard entry points to the Web: in January 2001 the cheapest Pentium III computer was $700 – hardly affordable for the low-income community access points. Further, the text-based interface of the Internet puts it out of reach for illiterate people.

To overcome these barriers, academics at he Indian Institute of Science and engineers at the Banga

Bangalore-based design company Encore Software designed a handheld Internet appliance for less that $200. Based on the Linux open source operating system, the first version of the Simputer will provide Internet and email access in local languages, with touch-screen functions and microbanking applications. Future versions promise speech recognition and text-to-speech software for illiterate users. The intellectual property rights have been transferred for free to non-profit Simputer Trust, which is licensing the technology to manufactures at a nominal fee – and the device is soon to be launched

_____

Source: UNDP, 2001: 35

5.2 FACILITATING ACCESS IN THE GLOBAL SOUTH

The ideas of a "Global Information Infrastructure" and of the "Information Superhighway" have dominated access models in the developing world. These ideals are envisaged through a lens that envisions the Internet evolving into some sort of panacea for the digital divide. Henceforth, achieving universal access (to the Internet) is seen as the ultimate end result for most ICT initiatives. The South African government has adopted a similar approach.

Although the use of the Internet is a useful indicator of the availability of ICT, the irregular supply of electricity, lack of infrastructure, "infostructure" and high costs of access impede most developing regions from entering the "digital world" (Sanyal and Schön, 1999; Intermediate Technology Development Group (ITDG), 2004). For instance, the ITDG (2004) found that the average cost of using a dial-up Internet for 20 hours per month in Africa is US$60, compared the United States' US$22 and US$39 in Europe.

Considering that US$60 is substantially more than the average African monthly income (ITDG, 2004), one can understand the reason there are 1:250 Internet users in Africa and 1:3 Internet users in the United States (Petzer, 2001). Bayes (2001), James (2001) and Rao (2004), amongst others, noted that there are other forms of ICTs that, on account to their lower cost, are better suited to facilitate electronic access to information for marginalized residents and lessen the digital divide.

Innovative technology in India, which will be the subject of this section, has been tailored to suit local conditions. India's initiatives facilitate access through technological leapfrogging[13] to using digital and other low cost technologies, and also orientate such technologies to suit the local environment (James, 2001).

Rao (2004) presents a number of case studies from India that elucidates these points. In the following sub-sections, the Information Village Experiment, Gyandoot, and TARAhaat projects will be discussed. The discussions will be mainly based on Rao's (2004) analysis of the projects. The choice of rural projects has no connection to the rural epitomising "the community". However, they were chosen purely on the basis of the lessons they offer.

5.2.1 The Information Village Experiment

The Information Village Experiment is a non-profit research centre (M. S. Swaminathan Research Foundation (MSSRF)) initiative aimed at empowering rural people in the Pondicherry region in South India through access to timely and relevant information, particularly with regard to

[13] "Leapfrogging" means bypassing some of the processes of accumulation of human capabilities and fixed investment in order to narrow the gaps in productivity and output that separate industrialised and developing countries (Steinmueller, 2001: 193)

information relating to the agricultural sector. Operational centres consist of nine public phones and three Internet service providers (ISPs).

Centres were established as hubs or value addition centres (VACs) for a local area network set up over ten villages. With two Internet dial up access modes, the VACs collects and transmits relevant information from the Internet to other computers in the network. Villages act as knowledge centres (VKCs) that are connected by wire and wireless networks where communities are afforded access to information.

Through communicating with the villagers at the early stages of the project (participatory rural appraisal, the VACs produced information relating to health, credit, transportation, weather, agronomic practices, etc. The information generated is made available on the network through databases in the native language. This initiative distributed reliable content to suit the needs of local people.

For instance, women farmers, who depend on selling grains for their livelihood, managed to negotiate better wages as a result of having information on grain prices. Also, women received health related information, particularly relating to child health. As a result women are empowered.

5.2.2 Gyandoot – Messenger of Information

Gyandoot is a government-aided project in the Dhar district of Madhya Pradesh aimed at creating a cost effective, replicable, and an economically self-reliant IT scheme in rural villages. The aim of this project was to use technology as a means of voicing people's concerns to the district government.

As such, Internet kiosks, powered by a wireless in local loop (WLL), were set up at market places, bus stations and meeting points in selected villages. The project targeted people's information needs such as rates of agricultural production, computer training, health services, e-mail, rural e-auctions, information on government programmes, information for children, an online employment exchange, local weather reports, e-newspapers, etc. But the raison d'etre for the project was an online redressal of public grievances.

Pal (2003) noted "a large part of the success of the project was the building demand and selling the idea of Internet information centres, including very extensive marketing to popularise the project" (114). Because dealing with government officials in India is regarded as a demanding proposition, the success of the project suggests that the idea of addressing a complaint to a computer seems more comforting.

Here the "impersonality and apparent incorruptibility of online access to information" (Pal, 2003: 114) is valued. Nonetheless, Kaushik and Singh (2004) note, in a study of a model (*Drishtee*) that was adopted to mainstream this concept across the country, that the inability of government to respond timely to complaints hurt the credibility of these projects.

In addition, the project provided entrepreneurial and hence empowerment opportunities for rural young people who ran kiosks. Most of the entrepreneurs were from the same villages that the kiosks were opened at (Kaushik and Singh, 2004). This made reaching out to the local people a relatively simple task, despite the fact that one out of six users in the project was illiterate (Rao, 2004).

5.2.3 TARAhaat – Star Market Place

The TARAhaat (TARA is an acronym for Technology Action for Rural Advancement) is a subsidiary commercial enterprise of Development Alternatives[14] (DA) (Kaushik and Singh, 2004). This initiative attempted to "connect rural India to the global village" in Northern India. The implementation of this objective involved franchising information kiosks. Franchisees were required to undergo a weeklong training programme. TARAhaat has the goal to have 47,000 kiosks by 2008, with close to five computers and approximately 1,000 users per kiosk (Kaushik and Singh, 2004).

The project was initiated as an Internet gateway that connects village users to information about social services, entertainment, and markets. The kiosks were located at "focal points" which government had already identified for economic development. Access was provided through some 20 plus franchised cybercentres (TARAkendras) customised in the language of the users' choice (English, Punjabi and Hindi). The content provided in TARAhaat related to law, governance, health and livelihoods. TARAhaat also connected rural craftspeople to urban and overseas customers.

Kaushik and Singh (2004) found that, as most franchisees did not always live in the exact place where they opened kiosks, reaching out to the local people proved to be difficult as they were seen as outsiders.

5.3 BRIEF REFLECTIONS

Although other interesting cases exist elsewhere (Doctor, 1994; Bayes, 2001; Lal, 2001; Pal, 2003, Kaushik and Singh, 2004; etc.), there are

[14] DA is a large NGO with two decades of experience of promoting sustainable development in rural India

certain empowerment and collaboration lessons that can be drawn out of the ICT projects just mentioned:

- Prioritising local needs through developing content in local languages, which would make content relevant to local needs.
- The scope of ICT initiatives must see beyond just the computer and the Internet to include other low cost technologies as well, i.e., Gyandoot. Some see privatisation and the competition that results thereof as essential to reducing cost of customary ICTs like the Internet (Bayes, 2001). On the other hand, Lal (2001) advocates for deliberate government promotion of ICTs as a liberalisation mechanism.
- E-government can reduce the time, travel and money people used to access government services. It can also empower those who would otherwise not be able to voice their concerns to government. It also integrates excluded groups into local decision-making processes. However, projects that embrace e-government need a responsible government that will deliver timely responses to people.
- Stakeholder involvement, participation and ownership in developing such projects are essential factors of success.

5.4 EMPOWERMENT THROUGH ICTs IN SOUTH AFRICA

Even though South Africa is considered a middle-income country with a per capita GDP of US$ 3,000, the country is still considered one of the most unequal in the world (Pigato, 2001). More than half of the population lives in poverty (*ibid*). A Gini coefficient of 0.58 proves that the income disparity between the rich and the poor in the country is amongst the worst in the world (Pigato, 2001; also see Ekurhuleni Metropolitan Municipality, 2003).

South Africa has well-developed communication infrastructure and capabilities in place, but their reach to the poor populace is lacking

(Pigato, 2001). ICT coverage in South Africa is uneven along spatial, socio-economic, and racial lines. For instance, 85 percent of white households have access to a telephone line compared to 14 percent of black households, and 1 percent of the rural population compared to 32 percent of the urban populace (May, 1998; Pigato, 2001).

This is evident in the map showing the percentage households with telephones and/or cell-phones in their dwellings in the three metropolitan municipalities of eKurhuleni, Johannesburg and Tshwane (*cf. figure 5.1*). In post-apartheid South Africa, the uneven socio-spatial pattern of urban settlements still has a distinct racial character.

Although it has also been noted that in the past decade or so the inequality between racial groups has decreased relative to intra-racial inequality (Terreblanche, 2002), this does not dismiss the continuing racially based socio-spatial inequality.

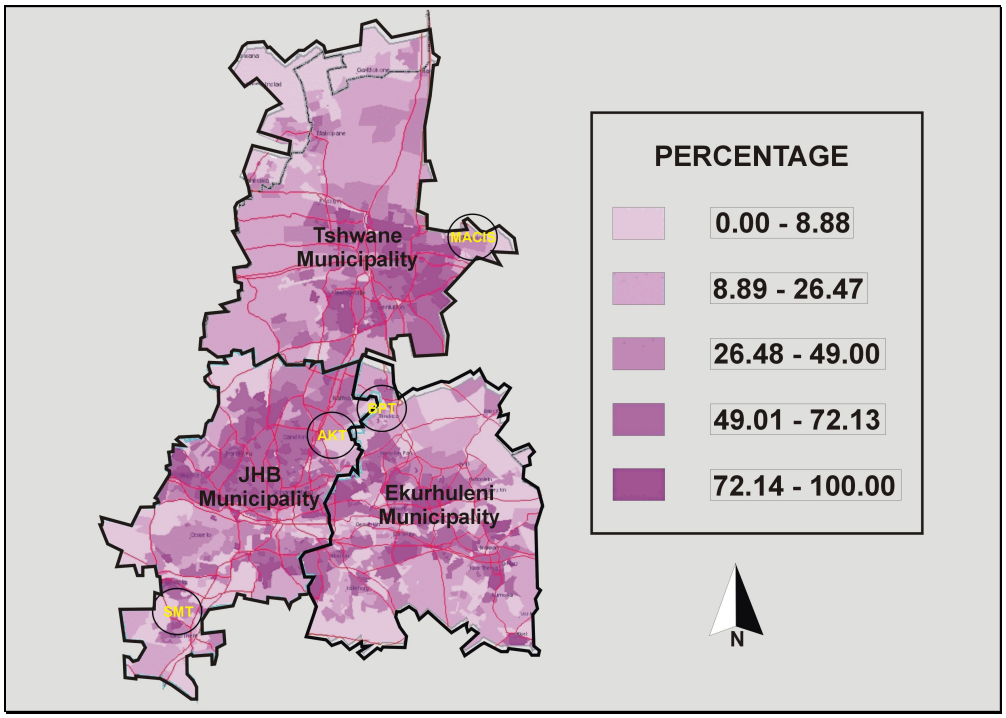


Figure 5.1: Percentage of Households with Telephones in Dwelling and/or Cell-phones in 2001

Source: Adapted from Municipal Demarcation Board, 2003

Townships represent racially based spatial planning that pushed poor, mostly black, residents into poorly serviced peripheral areas. Although these areas have very minimal infrastructural capacities, their infrastructures cannot be simply replaced. Hence more cost effective strategies are essential to integrating these regions into the informational economy.

This suggests a need for an empowerment model that embraces collaboration and mutual learning between affected stakeholders, so that policy makers and implementing agencies can identify the information needs of the people, through their involvement.

5.4.1 South Africa's Vision for Access: The Information Community

> Access to communications facilities is not only necessary for the delivery of services in critical sectors such as education and health; it also serves to stimulate the creation of small business and offers a channel of communication to reinforce participation in democratic processes at community, provincial and national levels. It is the essential backbone for development and offers the only opportunity for leapfrogging its relatively slow sequential phases
>
> (RSA, 1996b)

The South African government's vision for the provision of ICTs can best be characterised by that of an information community (National Information Technology Forum, 1997). This idea of an information community draws on the RDP (Reconstruction and Development Programme) principles of meeting basic needs, developing human resources, building the economy, and democratising the state and society.

The national government sees its role as promoting community-based information through establishing telecentres. Although there are other means through which ICTs are brought to the urban poor, i.e., community radio stations, phone shops, etc (Dept of Communications, 2004), this study will look specifically at telecentre projects.

Telecentres are seen, by the national government, as a cost-effective way of providing "universal access" through communal access (Naidoo, 1998; Pigato, 2001). These centres offer a wide range of services that communities can use for their empowerment (Currin, 2002). Successful (or financially sustainable) telecentres almost always offer fee-paying ICT services and computer and/or other training to local communities.

Pigato (2001) sees the key to the sustainability of telecentres as finding the nexus between financial sustainability and satisfying the information needs of diverse communities. Financial sustainability is achieved through operating telecentres on market principles, which means operating the centre as a business, but with a community development undertone.

To what extent does a market-based approach of empowerment reach poor urban residents? The Telecommunication White Paper (RSA, 1996b) acknowledges "liberalisation…could easily…draw interest and resources away from the delivery of service to rural and disadvantaged areas (*Op cit*: section 1.13).

The following section will explore the extent to which the studied telecentres have achieved the state's empowerment goals thus far.

5.4.2 Empowering Marginalized Residents: Telecentres

The earlier discussion of ICT projects in India illustrated that in order for ICTs to be empowering, there first needs to be awareness amongst people of the benefits that ICTs bring; there has to be affordable access to ICT facilities; there should be acknowledgment of the limitations of illiteracy, and thus language; and there has to be motivation on the benefits that ICT bring.

The implementation of ICTs for empowerment should be oriented towards developing content that is relevant to local needs; embraces low cost and affordable technologies; facilitates e-government; involves communities; and if possible certain aspects of projects and access should be controlled by communities. As such we need to ask, to what extent have ICT initiatives in South Africa been successful at achieving universal access and universal service?

Telecentres are generally located in historically disadvantaged areas, black townships and rural areas. Hence, the social environment in which they are located is characterised by poverty, unemployment and underdevelopment. Thus, they are meant to operate as mechanisms for bringing ICT services to these disadvantaged areas.

Funding from USA is, at times, once off. Some telecentres source their funding from various organisations and, on occasion, from local government. Funding, as a pivotal issue in the long-term sustainability of projects, was a common concern that hindered programmes for some of the centres.

The Siyabonga Telecentre in Orange Farm was concerned about making the public aware about its existence, as they did not have enough exposure. The Mamelodi Community Information Services telecentre in Mamelodi had not upgraded their computers since 2000. Continuous financial support was also an important issue for the Batho Pele Telecentre in Thembisa.

Hence, some telecentres offer other services, outside of the ICT sector, in order to sustain themselves. Alexsan Kopano in Alexandra is a special case, as the telecentre only offers computer literacy courses and ICT services like printing, photocopying, etc.

Facilities that are provided for telecentres by the state through USA funding include computers (but the quantity of computers varies from centre to centre), and other ICTs services like faxes and telephony. Only a select few, Siyabonga Telecentre and the Alexsan Kopano library, have Internet access points. All four centres also offer computer literacy training and other business related training. This training is carried out by ICT facilitators/instructors who usually reside in the area where the centre is located.

The research established that volunteers also play a major role at the telecentres. They assist users with using facilities, such as typing CVs, assignments, etc. At the Siyabonga Telecentre, volunteers play a significant role in this regard, but they also help with other aspects of the centre. In addition, a volunteer assisted people with regard to the use of the Internet at the Alexsan Kopano Telecentre, who unfortunately is no longer at this centre.

The research also show, at the Siyabonga and Batho Pele telecentres in particular, that some instructors and volunteers use the training they receive from the centres as platforms to gain skills to find employment elsewhere. Some instructors have opened ICT projects in the area, which are run as business ventures. The Siyabonga Telecentre assists these ventures by donating used computers after they upgrade their own. Whereas the Siyabonga Telecentre purposely pursues training people who are going to open their own business or use their skills somewhere else, the Batho Pele Telecentre expressed concern over the loss of skills to better paying jobs.

Telecentres also offer community-related information. For instance, MACIS in Mamelodi sells a directory of all the civil society organisations in the area. The Alexsan Kopano MPCC houses a number of civic organisations and a range of community services, including a library, and thus residents have easy access to information. The Batho Pele telecentre is also located in a MPCC surrounded by various government services including a library, Home Affairs offices, a Housing Department, and Social Welfare Department.

5.4.3 Empowerment?

Awareness

In the developing world, ICTs have not yet been embraced as tools for advancing economic, social and political well-being. Within this context, marketing the benefits of ICTs to the broader public is fundamental to their success.

The benefits of ICTs in South Africa are emphasized by the Department of Communications. Yet, local government involvement in these centres is almost non-existent. The benefits of local government involvement will be highlighted in *chapter six*.

The USA should collaborate with local government to ensure that the public is aware of the benefits of ICTs in advancing socio-economic well-being. One of its functions stipulated in the telecommunications white paper is "working with communities to identify telecommunications needs and disseminating information on universal service" (RSA, 1996b)

The extent in which the USA has achieved this is unclear[15], however, the increasing number of students at some centres, i.e., Siyabonga Telecentre, suggests that there is increasing awareness amongst the public.

[15] This was partly due to the timeframe for the research, which did not allow me to investigate this.

Affordable access

Affordable access to ICT facilities is imperative to the success of telecentres, particularly with regard to their role of empowerment. Although relatively inexpensive, the nature of the services offered at the telecentres exclude particular segments of the population.

The South African government, via USA, has grouped ICTs as computers, data projectors, Internet access, phones, photocopiers, printers, and sometimes satellite TV. These services are fundamental communication tools, and the role telecentres play in providing their local communities with these services that otherwise would not be offered is empowering in itself.

All centres expressed that their prices are relatively affordable compared to “other places” where similar services are offered, particularly when a situation existed where these services would not be offered locally. Telecentres also offer computer training as a form of introducing people to ICTs. Even though the telecentres operate as NPOs, in order to sustain themselves over the long run they need to be run as private enterprises.

Henceforth, the computer/information literacy training programmes that are offered at the telecentres only reach moderate-income persons. The fee for the course ranges from R 850.00 to R 1,970.00 at the various centres. Even though this reaches out to people who would otherwise not receive such (accredited) training, poor residents who cannot afford these fees are excluded.

In addition, people who enrol in the computer training programmes are fairly educated. The Siyabonga Telecentre uses a grade twelve qualification as their entry requirement to the information literacy course.

Nonetheless, they do not stick to this, as it would exclude “people who see the benefits of computer literacy in finding a job” (Siyabonga Telecentre, 2005).

Local content

Alexsan Kopano, MACIS and Batho Pele offer people information through the form of government services and directories of local civil society organisations, but at a cost. Yet, there is the issue of illiteracy in South Africa. In a local radio station it was mentioned that the average South African had the reading skills of a nine-year old (*SAFm*, September 2005).

Surely, this is a cause for concern, particularly when ICTs (that retrieve information, the Internet for instance) are so enmeshed in English. Wasserman (2002) noted, “less than 25% of black South Africans understand English well enough to function fully in public life, although English is practically the only language used in important public domains” (310).

In addition, the presence of indigenous South African languages on the Internet is minimal. A recent guide lists one Internet site in Zulu, one introductory site in seSotho, two sites in Xhosa (these were translated from English to Xhosa) and ten sites in Afrikaans (Wasserman, 2002).

E-government

The idea of e-government has not been fully embraced in the telecentres. This is partly due to negligible (almost non-existent) local government involvement in the conception of telecentres. Even though some staff members in Alexsan Kopano are remunerated by the City of Johannesburg, there are no programmes that facilitate electronic communication between local government and ordinary community

members. Therefore, national government needs to collaborate with local government in facilitating the inclusion of marginalized communities into this mode of governance.

As MPCCs act as “one stop shops” for government services, the idea of e-government is inherently set aside. There is minimal local government involvement in the implementing of these initiatives. With the exception of Alexandra’s community centre where local government supports some aspects of the centre, local government in general is not involved in the telecentres. E-government is non-existent.

Citizen involvement and participation

The centres are established as non-profit organisations, their services are not free as they are run on the basis of financial self-sustainability. A local community member established the Batho Pele centre as a “business”. Yet, the telecentre operates to serve the community.

> It’s not community owned. It is individually owned but has… [a] community owned principle, meaning that the [local] people benefit…[from] employment in the centre.
>
> (Interview with Thabiso Radebe, 2005)

Women and youth initiated the Siyabonga Telecentre. Since the integration of the telecentre into the multipurpose centre, young people from the local area and surrounding locales volunteer to assist in the running of the centre.

Overall, the empowerment objective of the state has been achieved to some degree. However, telecentres excluded those who cannot “afford” and hence does not fully empower previously disadvantaged areas.

5.5 CONCLUSION

Although the telecentres are doing admirable work, and according to policy the poor are supposed to benefit from these initiatives, it is questionable, at least at the telecentres researched, whether this happens. In addition, policy sees a homogeneous “historically disadvantaged area”, and thus assumes a homogeneous model, telecentres located in MPCCs, to realise the objectives of universal service and universal access in under-serviced areas.

When initiatives are implemented through national government bodies, they are likely to be generic and broad in scope, focussing more on replicability than on the variety of differences that create urban spaces and places.

6 CONCLUSION AND RECOMMENDATIONS

6.1 RECOMMENDATIONS

The recommendations will mainly focus on the issues discussed by Sanyal (2000) and Graham (2002b). Moreover, the initiatives from India also provide valuable lessons for South Africa.

Information and communication technologies (ICTs) are implemented by the state via the Universal Service Agency (USA) in South Africa. The research of four telecentres in previously segregated black areas in Gauteng shows that ICTs are seen by the state as ends, rather than tools of empowerment. This section will emphasise how this is so, and provide general recommendations for resolving this issue.

The research has argued that ICTs should be seen as tools rather than ends in realising social and economic advancement in poor communities. The researched telecentres are more of training institutions than access nodes for poor communities. Additional initiatives that can be driven by local government instead of the national government would be able to fill this void.

As telecentres are generally not linked to local governments, the information they offer is not relevant to local areas. For instance, at the Batho Pele telecentre, the GCIS office is a national department that releases national government policy information. It is very unlikely that the ordinary economically stressed person would be interested in such information.

Therefore, telecentres exclude economically stressed people through the model in which they function. Information offered at telecentres also

excludes people who are illiterate, although telecentres training programmes try to accommodate those without a matric qualification.

Involving local people in developing initiatives is essential in this regard. It is difficult for the national government than it could be for local government to implement strategies that involve local people. Thus, there should be integration between local government and national government in trying to find new ways of enhancing universal access.

These recommendations do not imply that telecentres are ineffective. Their role in bringing ICT services to marginalized urban and rural communities is acknowledged. However, they do not extend access beyond those who could otherwise afford to “logon”. A strategy that would recognise that communities are different, sensitive to cultural and language issues would somewhat extend beyond the telecentre model of access.

In addition, from the telecentres that were researched, only two were located in municipal offices and one in a community centre. Even though they are located in these focal areas, there is no evidence of extending access to incorporating e-government. E-government strategies that are sensitive to issues of illiteracy, for instance (*cf. chapter 5*), would ensure the integration of marginalized voices in urban governance and thus empowerment.

This, however, needs a developmental local government that would ensure that concerns, posted through ICTs, arrive at the relevant people and they are attended to. The case studies in India showed that if local government does not give timely responses to grievances, the credibility of such initiatives is damaged.

Telecentres offer standard ICT services like telephone, fax, typing and printing, Internet access (few). The incorporation of low cost technologies that would lead to the extension of access to poorer segments of communities should be considered. Here, the role of the private sector is essential as they can assist in the innovation of such technologies.

Lastly, there is a lack of civil society involvement in enhancing access. Although telecentres are established as non-profit organisations, they do not reach the poorest segments of communities. In addition, civil society organisations are seen as closest to the people and thus can enhance the participation of communities.

6.2 RESEARCH FINDINGS

Inequality has become somewhat of a permanent feature in contemporary urban environments. Literature that looks into ICTs and their interaction with urban space does not make addressing this issue any easier. ICTs are seen as polarising cities into high valued spaces of opulence and low valued spaces of poverty and deprivation.

The world city hypothesis offers useful insight regarding how new social and spatial extremes are forged by new ICTs. Still, the theory ignores a large part of the developing world. However, recent publications have attempted to integrate the developing world into this discussion. But these cannot be embraced uncritically without prior recognition of the influence of the histories that shape individual urban landscapes.

ICTs intensify socio-spatial polarisation by extending the power of the powerful, allowing affluent groups to selectively bypass local poor spaces, and are culturally and economically biased in their use. Thus, poor urban residents are “structurally” trapped in a cycle of poverty and deprivation.

They do not have the necessary physical and social infrastructure to be involved in the global world.

Technological optimists have considered looking beyond the structural limitations of infrastructural capabilities and the market economy. They advocate that marginalized communities can advance their social and economic well-being by being incorporated into the digital world.

Facilitating such access and realising the potential benefits of ICTs for marginalized groups offers opportunities within very complex settings. Fundamental to finding new ways of alleviating poverty and exclusion faced by poor urban residents, ICTs initiatives have to embrace a number of things.

For instance, it is less expensive and easier for “communities” to realise access collectively. Yet, collective action requires some kind of shared, collaborative decision-making process that involves various stakeholders. But many presume involvement and participation as only being facilitated by the state.

Planning for social transformation literature identifies the community and civil society as important constituents of empowerment. Nonetheless, planning for social transformation in post-apartheid South Africa needs, at some point, to be in collaboration with the state.

Empowerment through ICTs has been narrowly viewed as providing infrastructure in order to facilitate access. However, the lack of affordable technologies that would facilitate access, the lack of content that is relevant to local needs and (computer) illiteracy present barriers to access, particularly in developing countries. The states model of achieving universal access through the USA at the four telecentres that were researched represents such restricted ideals.

Thus this leads me to ask: have ICT strategies empowered "communities"/poor urban residents? Although telecentres are doing admirable work, the issue of achieving access as defined in this study remains problematic. The national government sees homogeneous "historically disadvantaged areas". Telecentres located in MPCCs are supposed to deliver universal service and universal access in under-serviced areas.

The problem with initiatives implemented by the national government level is that they are likely to be standard and broad in scope. These initiatives focus on establishing a "good practice" so as to replicate it throughout the whole country, thus ignoring differences that create urban places and spaces.

The telecentres in the MPCCs operate as small businesses run by local entrepreneurs. A common function of the telecentres is the provision of fee-paying communication services like photocopying, printing, typing, fax, and payphones. Only Alexsan Kopano in Alexandra and Siyabonga Multicentre in Orange Farm have access to the Internet. These services reach a relatively large numbers of people who otherwise could not have afforded such access.

Despite the fact that South African communities are heterogeneous and particular, the poor may have less voice/power and therefore be further disempowered through ICT interventions.

REFERENCES

Abu-Lughod, J (1994) "Diversity, Democracy, and Self-Determination in an Urban Neighbourhood: The East Village of Manhattan", *J*, *Social Research*, **61** (1), 181–203

Ackerman, D.R. (2004) "Using Community Partnerships to Create ICT Assisted learning Resource Centres to Bridge the Digital Divide, Thus Changing Infrastructure into Infostructure" <http://www.liasa.org.za/conferences/conference2004/papers/LIASA_Conference_2004_Ackermann.pdf> accessed 24 March 2005

African National Congress (ANC) (2005) "African National Congress National General Council Discussion Document – Development and underdevelopment: Learning from experience to overcome the Two-Economy Divide, 29 June to 3 July 2005 <http://www.anc.org.za/ancdocs/ngcouncils/2005/2economydivide.html> accessed 16 July 2005

Altshuler, A. (1973) "The Goals of Comprehensive Planning", in Faludi, A. ed. *A Reader in Planning Theory*. Pergamont Press, Oxford, 193–209

Andrieu, M (1999) "The City in the Global Village". OECD Observer, <*http://www.oecdobserver.org/news/fullstory.php/aid/41/The_city_in_the_global_village.html*> accessed 12 October 2005

Ayittey, G. B. N. (2001) "Africa and Globalization". Paper present at Cato University Workshop on Globalization <*http://www.freeafrica.org/features2.html*> cited 12 July 2004

Barnett, N.J. and Crowther, D.E.A. (1998) "Community Identity in the Twenty First Century: A Postmodernist Evaluation of Local Government Structure", *J*, *International Journal of Public sector Management*, **11** (6), 425–439

Bayes, A. (2001) "Infrastructure and Rural Development: Insights from a Grameen Bank Village Phone initiative in Bangladesh", *J*, *Agricultural Economics*, **25**, 261–272

Beard, V.A. (2003) "Learning Radical Planning: The power of Collective Action", *J*, *Planning Theory*, **2** (1), 13–35

Beaverstock, J.V., Taylor, P.J, and Smith, R.G. (1999) "A Roster of World Cities", *J*, *Cities*, **16** (6), 445-458

Bell, D. (1974) *The Coming of the Post-Industrial Society*. Heinemaan, London

Benjamin, P. (1997) "Information access for all in South Africa: Universal Service in Information and Communication Technologies". Paper presented to the Information Systems and the Public Sector Conference, Manchester, 29 June - 2 July 1997 <http://www.sn.apc.org/nitf/report/addenda1.htm#teleco> accessed 10 August 2005

Bremner, L. (2004) *Johannesburg: One City, Colliding Worlds*. STE Publishers, Johannesburg

Cairncross, F. (1997) *The Death of Distance: How the Communications Revolution Will Change Our Lives*. Harvard Business School Press, Boston

Castells, M and Hall, P.G (1994) *Technopoles of the World: The Making of the Twenty-First-Century Industrial Complexes*. Routledge, London

Castells, M. (1978) *City, Class, and Power*. MacMillan, London (Translation supervised by Elizabeth Lebas)

Castells, M. (1985) *From the Urban Question to the City and the Grassroots*. University of Sussex, Brighton

Castells, M. (1989) *The Informational City: Information Technology, Economic Restructuring and the Urban-Regional Process*. Blackwell Publishers, Oxford

Castells, M. (1996) *The Rise of the Network Society*. Blackwell Publishers, Cambridge

Castells, M. (1998) "Possibilities for Development in the Information Age: Information Technology, Globalization, and Social Development", prepared for the United Nations Research Institute for Social Development, Geneva, 22nd–24th March 1998 <http://www.chet.org.za/oldsite/castells/devinfage.html> accessed 20 June 2005

Castells, M. (1999a) "The Social Implications of Information and Communications Technologies", prepared for the UNESCO's World Social Sciences Report <http://www.chet.org.za/oldsite/castells/socialicts.html> accessed 20 June 2005

Castells, M. (1999b) "The Informational City is a Dual City: Can it be Reversed?" in Schön, D.A., Sanyal, B, and Mitchell, W.J. (Eds.) *High Technology and Low-Income Communities: Prospects for the Positive Use of Advanced Information Technology*. MIT Press, Cambridge, 25–42

Castells, M. (2002) *The Castells Reader on Cities and Social Theory*. Blackwell Publishers, Malden

Cheung, D.M.Y. (2001) "An Empowering Global Discourse? Infromation Communication Technology (ICT), Media and Women's Empowerment in the Beijing Platform for Action and its Review", VIIO Seminar: Women and the Internet, 18 January 2001 <http://www

City of Johannesburg (2000) "State of the Environment Report" <http://www.joburg.org.za/city_vision/index_documents.stm > cited 06 October 2004

Clark, D. (1996) *Urban World/Global City*. Routledge, London

Crankshaw, O. and Parnell, S. (2004) "Johannesburg: Race, Inequality, and Urbanization", in Gugler, J. (ed.) *World Cities beyond the West: Globalisation, Development, and Inequality*. Cambridge University Press, Cambridge, 348-370

Currin, M (2002) "Communicating for Development" A paper presented to the National Communication Conference of the University of the Free State, Mangaung, 31 October to 1 November 2002 <*http://www.gcis.gov.za/mpcc/initiative/documents/research/devcom.htm*> Accessed 14 April 2004

Davidoff, P. and Reiner, T.A. (1973) "A Choice Theory of Planning", in Faludi, A. ed. *A Reader in Planning Theory*. Pergamont Press, Oxford, 11–39

Doctor, R.D. (1994) "Seeking Equity in the National Information Infrastructure", *J*, *Internet Research: Electronic Networking Application and Policy*, **4** (3), 9–22

Etzioni, A. (1973) "Mixed Scanning: A "Third" Approach to Decision-Making", in Faludi, A. ed. *A Reader in Planning Theory*. Pergamont Press, Oxford, 217–229

Flyvbjerg, B. 1998 *Rationality and Power: Democracy in Practice*. Chicago University Press, Chicago

Flyvbjerg, B and Richardson, T. (2002) "Plannign and Foucault: In Search of the Dark Side of Planning Theory", in Allmendiger, P. and Tewdwr-Jones, M (eds.) *Planning Futures: New Directions for Planning Theory*. Routledge, London

Foley, D.C. (1973) "British Town planning: One Ideology or Three?", in Faludi, A. ed. *A Reader in Planning Theory*. Pergamont Press, Oxford, 69–93

Forster, J. (1999) *The Deliberative Practitioner: encouraging participatory Planning Processes*. MIT University Press, Cambridge

Fors, M. and Moreno, A. (2002) "The benefits and Obstacles of Implementing ICTs Strategies for Development from a Bottom-Up Approach", J, *Aslib Proceedings*, **54** (3), 198–206 <http://www.emeraldinsight.com/0001-253X.htm> accessed 14 April 2005

Friedmann, J. (1987) *Planning in the Public Domain: From Knowledge to Action*. Princeton University Press, New Jersey.

Friedmann, J (1999) "Claiming Rights: Citizenship and the Spaces of Democracy", *J*, *Plurimondi*, **1** (2), 287–303

Friedmann, J. and Wolff, G. (1982) "World City Formation: An Agenda for Research and Action", *J, International Journal of Urban and Regional Research*, vol. 6, no. 3, pp 309-344

Goddard Space Flight Centre (2005) "The Earth at Night" <http://nssdc.gsfc.nasa.gov/planetary/image/earth_night.jpg> accessed 20 June 2005

Gottdiener, M. and Budd, L. (2005) *Key Concepts in Urban Studies*. Sage Publications, London

Government Communication and Information System (GCIS), (2001) "Multipurpose Community Centres" <*http://www.gcis.gov.za/mpcc/index.html*> accessed 14 April 2005

Graham, S (2002a) "Flow City: Networked Mobilities and the Contemporary Metropolis", J, *Journal of Urban Technology*, **9 (1)**, 1–20

Graham, S. (2001) "The City as Socio-Technical Process: Networked Mobilities and Urban Social Inequalities", J, *City*, **5** (3), 339–349

Graham, S. (2002b) "Bridging Urban Digital divides? Urban Polarisation and Information and Communications Technologies (ICTs)", J, *Urban Studies*, **39 (1)**, 33–56

Graham, S. and Marvin, S. (1996) *Telecommunications and the City: Electronic Spaces, Urban Places*. Routledge, London

Gugler, J. (2004) "Introduction", in Gugler, J. (ed.) *World Cities Beyond the West: Globalisation, Development and Inequality*. Cambridge University Press, Cambridge, 1–24

Gulube, S. (2001) “Interview with CEO of the Universal Service Agency Sam Gulube” The New York Times Special Advertising Section <http://www.usa.org.za/> 07 October 2005

Hall, P. (1966) *The World Cities*. Weidenfeld and Nicolson, London

Hall, P. (1999) “Changing Geographies: Technology and Income”, in Schön, D.A., Sanyal, B, and Mitchell, W.J. (Eds.) *High Technology and Low-Income Communities: Prospects for the Positive Use of Advanced Information Technology*. MIT Press, Cambridge, 43–68

Harvey, D (1989) “From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism”, J, *Geografiska Annaler (B)*, **71** (1), 3–17

Harvey, D. (1999) “Frontiers of Insurgent Planning”, *J*, *Plurimondi*, **1** (2), 269–286

Healey, P. (1995) “Planning Through Debate: The Communicative Turn in Planning Theory”, in Campbell, S. and Fainstein, N. (eds) *Readings in Planning Theory*. Stockholm, Oxford, pp 234-257

Healey, P. (1997) *Collaborative Planning: Shaping Places in Fragmented Societies*. Macmillan Press LTD, London

Healey, P. Cameron, S., Davoudi, S, Graham, S., and Madanipour, A (1997) “Introduction: The City – Crisis, change and invention”, in Healey, P. Cameron, S., Davoudi, S, Graham, S., and Madanipour, A. ed. *Managing Cities: The New Urban Context*. John Wiley and Sons, New York, 1–20

ICT Charter Steering Committee (2005) “Draft Black Economic Empowerment Charter of the ICT Sector” <http://www.ictcharter.org.za/content/ICTbeecharter04may2005-Minister.pdf> accessed 10 August 2005

Innes, Judith (1996) “Planning through Consensus Building”, *J*, *Journal of the American Planning Association*, vol. 62, issue 4, pp 460 – 473

Intermediate Technology Development Group (ITDG) (2004) “Get Connected South Africa” <http://www.itdg.org/technicalinformationservice> accessed 04 September 2005

International Labour Review (2001) “Introduction: The Digital Divide: Employment and Development Implications”, J. *International Labour Review*, **140** (2), 113–117

James, J. (2001) “The Global Information Infrastructure Revisited”. *J*, *Third World Quarterly*, **22** (5), 813–822

Kaushik, P.D. and Singh, N. (2004) “Information Technology and Broad Based Development: Preliminary Lessons from North India, J, World Development, 32 (4), 591–607

Kelley, C., Wang M., Bitko G., Chase M., Kofner A., Lowell J., Mulvenon J., Ortiz D., and Pollpeter K. (2004) “High-Technology Manufacturing and U.S. Competitiveness” <http://www.rand.org/publications/TR/TR136/> 15 August 2004

Knight, R.V. (1989) “The Emergent Global Society”, in Knight, R.V. and Gappert, G. eds. *Cities in a Global Society*. Sage Publications, London, 24–43

Kranzberg, M. (1989) ‘IT as Revolution: The Information Age’ in Forester, T (ed) *Computers in the Human Context: Information Technology, Productivity and People*. MIT Press, Cambridge

Lal, K. (2001) “Institutional Environment and the Development of Information and Communication Technology in India”, *J*, *The Information Society*, **17**, 105–117

Lemon, A. (1991) (ed.) *Homes Apart: South Africa’s Segregated Cities*. David Phillip, Cape Town

Lindbolm, C.E. (1973) “The Science of ‘Muddling Through’”, in Faludi, A. ed. *A Reader in Planning Theory*. Pergamont Press, Oxford, 288–304

Madon, S. and Sahay, S. (2001)”Cities in the Developing World: Linking Global and Local Networks”, *J*, *Information Technology and People*, **14** (3), 273–286

Mansell, R. (2002) “Constructing the Knowledge Base for Knowledge-Driven Development”, *J*, *Journal of Knowledge Management*, **6** (4), 317–329 <http://www.emeraldinsight.com/1367-3270.htm> accessed 12 May 2005

Marais, H. (2001) *South Africa Limits to Change: The Political Economy of Transition*. University of Cape Town Press, Cape Town

Marcuse, P. “The Language of Globalization”, *J*, *Monthly Review*, **53** (3) <http://www.monthlyreview.org/700marc.htm> cited 20 June 2000

May, J. (1998) “Poverty and Inequality in South Africa”. Report prepared for the Office of the Executive Deputy President and the Inter-Ministerial Committee for Poverty and Inequality, Summary Report

McManus, P. (2001) “One Step Forward and Two Steps Back: Urban Policy and Community Planning in England since 1979”, in Yiftachel, O., Little, J., Hedgehock, D. and Alexander, I. eds. *The power of Planning: Spaces of Control and Transformation*. Kluwer Academic Publishers, London, 45–55

McNamara, K.S. (2003) “Information and Communication Technologies Poverty and Development: Learning From Experience”, a background paper for the InfoDev annual Symposium, December 9–10, Geneva Switzerland <http://www.worldbank.org/> accessed 20 June 2005

Milson, F. (1974) *Introduction to Community Work*. Routledge and Kegan Paul, London

Mitchell, W. J. (1995) *City of Bits: Space, Place and the Infobahn*. MIT University Press, Cambridge

Moss, M. L. (1987) “Telecommunications, World Cities, and Urban Policy”, J, *Urban Studies*, vol. 24, pp 534-546

Municipal Demarcation Board (2003) “Municipal Profiles 2003” <http://www.demarcation.org.za/municprofiles2003/index.asp> 14 September 2005

Naidoo, J. (1998) “Address by Jay Naidoo to World Telecommunications Development Conference” Tuesday, 24 March 1998, Valetta, Malta <http://www.polity.org.za/html/govdocs/speeches/1998/sp0324.html> accessed 09 October 2005

National Information Technology Forum (NITF) (1997) “Towards an Information Society Policy for South Africa”. A process proposal from the National Information Technology Forum Draft 5, 1997–05–22 <http://www.sn.apc.org/nitf/nispp-v5.htm> 14 September 2005

Negroponte, N. (1995) *Being Digital*. Knof, New York

Norris, P. (2001) *Digital Divide.* Cambridge University Press, Cambridge

Osborne, S.P. (1994) “The Language of Empowerment”, *J*, *International Journal of Public Sector Management*, 7 (3), 56–62

Pal, J. (2003) “The Developmental Promise of information and communication technology in India”, *J*, *Contemporary South Asia*, **12** (1), pp 103–119

Pascal, A. (1987) “The Vanishing City”, J, *Urban Studies*, vol. 24, pp 597-603

Petzer, W.J. (2001) "Gap Matter in the Local Village: A Case Study on the "hut-wired" Situation in Qwa-Qwa, South Africa" <http://www.isocarp.org/Data/case_studies/cases/cs01_4554/report.htm> accessed 20 June 2005

Pigato, M.A. (2001) "Information and Communication Technology, Poverty, and development in sub-Saharan Africa and South Asia", Africa region working paper series no. 20 <*http://www.worldbank.org/*> accessed14 September 2005

Pojman, L.P. and Westmoreland, R. (1997) *Equality: Selected Readings*. Oxford University Press, Oxford (Edited Book)

Prud'Homme, R. (1989) "New Trends in the Cities of the World", in Knight, R.V. and Gappert, G. eds. *Cities in a Global Society*. Sage Publications, London, 44–57

Rangan, H. (1999) "Bitter-Sweet Liaisons in a Contentious Democracy: radical Planning through State Agency in Postcolonial India", *J, Plurimondi*, **1** (2), 47–66

Rao, S.S. (2004) "Role of ICTs in India's Rural Community Information Systems", *J, Info*, **6** (4), 261–269 <http://www.emeraldinsight.com/1463-6697.htm> accessed 12 May 2005

Republic of South Africa Department of Communications (2004) "The Department of Communications Annual Report, April 2003 to March 2004" <*http://www.doc.gov.za/*> accessed 10 August 2005

Republic of South Africa Department of Education (2003) "General Notice 1869 of 2004 - Draft White Paper on e-Education: Transforming Learning through Information and Communication Technologies (ICTS)", *Government Gazette*, vol. 240, no. 26734.

Sandercock, L (2003) *Cosmopolis II: Mongrel Cities of the 21st Century*. Continuum, New York

Sandercock, L. (1995) "Voices from the Borderlands: A Meditation on a Metaphor", J, *Journal of Planning Education and Research*, vol. 14, pp 77-88

Sandercock, L. (1998) *Towards Cosmopolis: Planning for Multicultural Cities*. Wiley, Chichester

Sandercock, L. (2005) "Designing with Diversity: The Satanic Verses as Design Manifesto in an Age of Migration" Keynote Address, EDRA, Vancouver, 27th April 2005.

Sanyal, B. (2000) “From Dirt road to Information Superhighway: Advanced Information Technology (AIT) and the Future of Cities”, in Wheeler, J.O., Aoyama, Y. and Ward, B. (eds) *Cities in the Telecommunications Age*. Routledge, New York, 143-157

Sanyal, B. and Schön, D.A. (1999) “Information Technology and Urban Poverty: The Role of Public Policy”, in Schön, D.A., Sanyal, B, and Mitchell, W.J. (Eds.) *High Technology and Low-Income Communities: Prospects for the Positive Use of Advanced Information Technology*. MIT Press, Cambridge, 371–393

Sassen, S. (1991) *The Global City: New York, London, Tokyo*. Princeton University Press, New Jersey.

Sassen, S. (1994) *Cities in a World Economy*. Pine Forge Press, California

Sassen, S. (2002) *Global Networks, Linked Cities*. Routledge, New York

Sassen, S. (2004) “Afterword”, in Gugler, J. (ed.) *World Cities beyond the West: Globalisation, Development, and Inequality*. Cambridge University Press, Cambridge, 371 - 386

Schön, D.A. (1999) “Introduction”, in Schön, D.A., Sanyal, B, and Mitchell, W.J. (Eds.) *High Technology and Low-Income Communities: Prospects for the Positive Use of Advanced Information Technology*. MIT Press, Cambridge

Sebusang, S.E.M. and Masupe, S., 2003. “ICT development in Botswana: Connectivity for rural communities". *The Southern African Journal of Information and Communications*, Issue No. 4, pp 41-5

Servon, L. (2002) “Four Myths about the Digital Divide”, J, *Planning Theory and Practice*, **3** (2), 222–227

Sheppard, E., Couclelis, H., Graham, S., Harrington, J.W., and Onsrud, H. (1999) “Geographies of the Information Society”, *J*, *International Journal of Geographical Information Science*, 13 (8), 797–823

Shipalana, N. B. (2004) “Looking at the Present for an Uncertain Future: Exploring Information Technologies and Urban Space”. Department of Town and Regional Planning, University of the Witwatersrand Johannesburg

Shorter Oxford English Dictionary on Historical Principles (2002) *Shorter Oxford English Dictionary on Historical Principles*, Volume 1, 1st edition. Oxford University Press, Oxford

Sigidi, K.T. and Seti, B. (2000) “Government Development Communication Initiative: Toward a Better Life through Integrated Service and Information Delivery” <*http://www.gcis.gov.za/mpcc/initiative/documents/policy/integratedserv.htm*> accessed 14 April 2005

Simone A-M. (2003) “Intersecting Geographies? ICTs and other Virtualities in Urban Africa”. Graduate Program in International Affairs, New School University <*http://hq.unhabitat.org/programmes/ifup/conf/other.htm*> cited 14 May 2004

Singhal, A. and Rogers, E. M. (1989) *India’s Information Revolution*. Sage Publications, New Delhi

Soja, E. W. (2000) *Postmetropolis: Critical Studies Of Cities And Regions*. Blackwell Publishing, Malden

Siyabonga Multi Purpose Centre (2005) “Siyabonga Multi Purpose Centre Progress Report”. Unpublished Report

Taylor, M. (2003) *Public Policy in the Community*. Palgrave MacMillan, Basingstoke.

Taylor, P.J. and Walker, D.R.F. (2001) “World Cities: A First Multivariate Analysis of their Service Complexes”, *J*, *Urban Studies*, **38** (1), 23–47

Republic of South Africa (1996a) “Telecommunications Act, no. 103 of 1996” <*http://www.gov.za/*> 11 August 2005

Republic of South Africa (1996b) “White Paper on Telecommunications Policy” <*http://www.gov.za/*> 11 August 2005

Republic of South Africa (2001) “Telecommunications Amendment Act, no 64 of 2001” <*http://www.gov.za/*> 11 August 2005

Terreblanche, S. (2002) *A History of Inequality in South Africa, 1652-2002*. University of Natal press, Pietermaritzburg

Thioune, R.M. (2003) “Information and Communication Technologies for Development in Africa – Volume 1: Opportunities and Challenges for Development”. International Development Research Centre, Online Book <*http://web.idrc.ca/openebooks/001-2/*> accessed 29 March 2005

Toffler, A. (1980) *The Third Wave*. Collins, London

UN Habitat (2001) “Un-Habitat Istanbul +5 – Urbanisation: Facts and Figures” <*http://www.unhabitat.org/istanbul+5/bg10.htm*> accessed 12 October 2005

United Nations Development Programme (UNDP) (2001) *Human Development Report 2001* – “Chapter 2: Making New Technologies Work for Human Development”. Oxford University Press, Oxford

Universal Service Agency (2003) “The Universal Service Agency” <*http://www.usa.org.za/*> 30 June 2005

Verma, N and Shin, H-R (2004) “Communicative Action and the Network Society: A Pragmatic Marriage?” *J*, *Journal of Planning education and Research*, **24**, 131–140

Walmsley, D. J. (2000) “Community, Place and Cyberspace”, J, Australian Geographer, vol. 31, no. 1, pp 5-19 <*http://www.ebscohost.com/*> cited 16 April 2004

Wasserman, H. (2002) “Between the Local and the Global: South African Languages and the Internet”, *J*, *African and Asian Studies*, **1** (4), 303–321

Webber, M. M. (1963) ‘Order in diversity: Community Without Propinquity’, in Wingo, L. (ed.) *Cities and space*, Johns Hopkins University Press, Baltimore, pp. 23–56.

Winkler, T. (2005) “Kwere Kwere Journey into Strangeness: Reimagining Inner-City Regeneration in Hillbrow, Johannesburg”. Unpublished Doctoral Thesis, University of British Columbia, Vancouver, Canada

Yiftachel, O. (2001) “Introduction: Outlining the Power of Planning”, in Yiftachel, O., Little, J., Hedgehock, D. and Alexander, I. (Eds.) *The power of Planning: Spaces of Control and Transformation*. Kluwer Academic Publishers, London, 1-20

Young, I.M. (1995) “city Life and Difeference”, in Kasinitz, P. ed. *Metropolis: Centre and Symbol of Our Times.* MacMillan Press LTD, London, 250–270

APPENDICES

APPENDIX A:

Interview with Mr. Thabiso Radebe at the Batho Pele Telecentre in the Thembisa Community Centre, 26th of April 2005

Nkateko B. Shipalana: What is a Telecentre?

Thabiso Radebe: A Telecentre is a centre where automation services are rendered. A telecentre, as a government initiative, was founded under the telecommunications Act under the Universal Services Act. That act gave the Universal Service Agency a mandate to roll out telecentres. Telecentres have…the intention, let me say…was to bring telecommunication to the township, disadvantaged areas…and semi rural areas. But the most focus is in the rural areas.

In the Telecentre you will find a telephone line, photocopying machine, scanner, printer, e-mail and Internet and you will find computers. Normally, a standard telecentre will have three computers; three telephone lines; one fax machine; a photocopier; printer; scanner and a data projector. As you can see all these are communication devices, right! And also the telecentre is supposed to serve as an information centre, i.e., Government information.

Now because if the new concept of government, in terms of redefining what we call multipurpose centres [MPC], one of the principles the government has taken is that where there is an MPC there must be a telecentre…

NBS: So there's a difference between an MPC and a telecentre?

TR: Ja [Yes] there is a difference! An MPC, in terms of the government definition, is a centre where at least seven government services are rendered. Like home affairs, labour, SARS [South African Revenue Services], justice (in most cases), err…

NBS: So are these services using the telecommunication infrastructure that you have?

TR: Yes, yes. The intention of the MPC is to try to integrate services, to say it must be a one-stop service, right! The intention of the government was not to close down previous MPC centres but what they do is to capacitate those centres. But the problem also was the question of

distance in terms of MPCCs. They must not be far from each other [the government services rendered], but must be around the same vicinity. Not necessarily with one building.

For example, here just across the street you have the police station (cops), the library that side, home affairs operates in this room and you have the housing department, and social welfare (the social services department). The purpose also was to achieve the objective of universal access and universal service. So all these are done with the intention to achieve those. In short this is what the MPCC is all about.

NBS: Even this telecentre is based on these same principles?

TR: Yes it is based on the same idea. Actually, now there is this initiative from the premier's office of launching what they call the PGP, or something like that, ok. They say it's a portal point, something like that…I'm not sure exactly what it's all about, but this centre was one of the centres which was identified. And then at the same time was also to render Internet services, so a café will also be launched when the premier comes in…we will be launching an Internet café here in the centre so that people can now access one line of Internet but you know, the intention of bringing in the Internet café is also to capacitate the centre in terms of cash flow because it has to be self-sustainable.

As much as our prices, because these are government initiatives, are regulated right, err…whether because even if we don't have…we are not subsidized but these things are intended for the communities to access them. So that our prices are in such a way that people at least can afford…you know! Like we also render training because we realised that all those services, were not easy to access because people didn't have the skill. So what we are struggling to do now was struggling to accredit these centre, this telecentre, so that they now offer training…

NBS: Can I follow up on something? You were talking about training and finances and access for communities. Who started this centre and who are the people who use the centre?

TR: I am the person who started the centre. Maybe it was wrong when we say who started the centre?

NBS: Who was given the initial funding for the centre?

TR: The initial finding was put through…the Universal Fund, [of] the Universal Service Agency. What happened was…they advertised these centres for proposals…people to send proposals. So I wrote a proposal, as an individual. These centres were offered at that time, packed as eighteen [18] pilot projects, they were offered as business or community. So I applied as an individual at that time.

NBS: So this is not a community centre?

TR: It's not community owned. It is individually owned but…[it is] based on the principle of community owne[rship]…Meaning that the people benefit in the following manner; employment in the centre, the first preference is giving the local people, the community. The fortunate part also is that I build them from scratch. I find a person who does not know a computer, can learn to use a computer. I take him (or her) to a training course. We [also] don't advertise [posts]. The criteria I use to identify people is through the social welfare department where they have what they call an indigent programme. So as part of an X programme we are also involved as this centre. They give us a number of students…a term. Our term is from, let's say, January to June. We'll say at least 20 people must be trained free of charge. So we divide those people into groupings [of] ten… and around June again we do other groups… These are people who we train as our social responsibility. That is how communities benefit…in the sector.

NBS: So you identify people from the social welfare department's indigent programme?

TR: What I do, I pay for those facilities I use to train them, right! Then that will make people benefit…apart from the question of employing them internally. And also the prices [charged to people using the facilities in the telecentre] are regulated. You go out there, photocopying for example, or printing you find that it's R50-00 and this side it will be much cheaper, right!

The aim is to make sure that the centre is self-sustainable. Man, this thing would be less pricey if we were subsidized, unfortunately no one is subsidizing us, we are on our own. At the end of the day those individuals who are training must get at least some…we don't have a salary here, we have a stipend of up to R1000-00 per month, right. So maybe then after that accreditation that's when we will consider raising the money and turn them into proper salaries. …All of us work …[as] volunteers, for example I've been working from 1997…

NBS: So this telecentre started in 1997?

TR: Yes. It started in 1997. From 1997 I don't have a salary. I only survive by the R500-00…I started earning R200-00 per month on what we generate. But now because we do training it has increased, I get R1000-00 per month, you know. But, I gain more from the centre through accessing training that is offered by the Telecommunications Department. I go for training free of charge, so I get skilled.

NBS: I'm left with only a few more questions to ask. Can you take me through the programmes that you run in the centre?

TR: Presently we do photocopies…

NBS: Sorry to interrupt, as you go through programmes like photocopying, scanning, etcetera, can you also tell me the costs/prices?

TR: Photocopying is 50cents per copy, typing is R8-00 per copy black and white. Colour, not a lot of people use colour as we usually type CVs, sometimes we do letterheads for the department of social services, business cards and we charge R250-00 per 100 business cards. [For] letterheads we charge about R150-00 per 100.

Then we also do computer literacy training, which is accredited by Wits University. The P&DM Link Centre. The course covers basic concepts of IT in terms of word, PowerPoint, Internet and e-mail. And we are in the process of accrediting our end user computing, which is an advanced course.

We've started ICSETA, that is a SETA for IT. We are also about to finish the accreditation process by the end of next month [May]. We are only left…we've requested Wits University to do what you call 'unit standards', that is the only thing that is left. Unit standards for the course that we are offering from Wits.

NBS: What are unit standards?

TR: Unit standards, these are sort of to say during training what is it that the learners gain. What skills learners will achieve, right, err, The learning part, right, err, to say that these are the following skills that the person will gain from the training…something like that.

NBS: So are these all the programmes you offer?

TR: Yes, these are the programmes. We also offer information to the public; all government documents are printed here through the GCIS [Department of Government Communication and Information System], because we have GCIS here. People come in to collect government documents. If the president makes a speech, they come around, they know. If there are telecommunications events we offer access through the TV, the dish, 'cause we have a satellite dish. If there are telecommunications events, they are shown here, we hire a big screen and people come in. We hope that soon we'll also…we've been trying to get a bigger screen that is going to be stationed here so that we encourage interdiscussions between communities, that is through…teleconferencing. But this time using the screen, people discussing, creating discussions. That process is still…we're still negotiating with the sponsors because it is a little bit expensive. We are

negotiating a deal to offer Internet and e-mail courses from Unisa [the University of South Africa], we are at this stage discussing with Unisa.

NBS: Can I go back to the computer literacy training? How do people get in, and how much do they pay?

TR: It varies from centre to centre. But here, we charge R850-00. The course is R850-00 and we train it here. I am one of the facilitators, and I was trained by Wits to become a facilitator. And then…with this R850-00 we cover word processing, basic concepts, PowerPoint, Internet and e-mail. That is our modules. Wits, the Link centre, also issues certificates. They are the ones who plan the training programmes. And the training manuals, we buy from them. That is another way of maintaining equality of training, to make sure that people are not offered… [Tape Error]

…when people register, first before people go into the class, we have an evaluation programme that we do. People say their expectations and based on what they are expecting, and then we plan our programme. To say that people, this person what to know this and that and that and that. And we also…the level of education, we are not that strict. As long as a person can read and write, they are allowed to attend the course. So that is the method we use to check that we training what people want. That is before the course, we do evaluations.

Another thing also, during the course we have a sort of a backup systems where we do backup training. I have people who work as assistant trainers who back up people who are slow. Also we have after care. After care, what we mean is that we noticed that not a lot of people have computers, so we have an open day, for example, on a Friday from twelve o'clock until four o'clock is an open day for all students who trained with us. Even if you trained here two or three years ago you can still come and do practicals and tell us where you have problems with this and that and that.

And also, we are in the discussion stages with a pay slip company so that they can give us programmes to add in our training so that when we train people, they are allowed in a certain sector in the industry. This is the major flaw of the whole thing. But we are, we hope we get it

NBS: Can you tell me what you mean by the industry, or the industries that you are speaking of?

TR: Presently, most of the industries that we took our students to, we have students who have learned here and today they are technicians taken into learnership. ICSETA take learners from us. The water department, East Rand water care also took our twenty students from us last year. And then told fifteen of those students were taken permanently.

CS Holdings took about five student, they are all still there. They are technicians now through learnerships. Also we have Midrand call centre, the traffic [department's]. [The] Fire Department also took students from us for call centre development. And those were most of the areas.

Presently we are looking also looking at data capturers, people who are specialising in data capturing to take some of our students. We're trying, but not yet there! The specialist industry that we are discussing with is Kelly Industry.

NBS: I apologise for changing the topic again. Thank you for your time! With regards to the pricing, how sustainable do you think it is, in do you think that it will be sustainable in the long run?

TR: it is not. It is not if we don't get a sponsor. But because of these accreditation processes we are going to be forced to change the prices. We are forced now by what they call the scaling that the SETA is using. Everybody who's accredited by them must follow the scaling. That means that, yes, the reason I'm saying the R850-00 is not sustainable.

One, we have computers to maintain, we have problems with keyboards that trouble you all the time, you must buy certain sprays and so on. Sometimes we have power failures and you must go and change hard drives and so on. And all that. And then sometime they do printing, you must buy cartridges and they are expensive. The prices are high.

So even every year, we are review, we are reviewing our prices. But now we are going to be forced to align ourselves in terms of the scaling set by the SETA.

NBS: Does that mean you are going to increase your prices?

TR: Yes! Coz even Wits University they are saying…they themselves are going to apply for accreditation so they will drop us very soon. So we have to be on our own very soon. Very soon meaning from next month. But they are not just dropping us, they also assisting us in developing all the requirements that are needed in terms of ICTs.

The major challenge that we have in this centre isthat We train people, we give them skills, but because we don't give them enough salaries, when greener pastures appear, they go. The unfortunate part of it even if you make them sign a contract, when they go, let me say the painful part of it when they don't even tell you they are going, they just disappear. When you discover that this person is gone now, they say: no I've got work, I'm working somewhere else.

And we are of course victims of poaching you know! They come to ask questions, as you are coming now doing research. And after that when I'm

not here they come back for my staff, promise them that and that and that and they take them. That is the major challenge right, is how to prevent poaching. There's a lot of poaching. Last week Friday we lost one facilitator, without notice.

And now I'm busy interviewing, people are writing aptitude tests to try and get at least a person who has a little bit of skill and then I will upgrade from there. But time is always against me. That is the major, major challenge we have at the centre, sustaining the skilled people that we have in this centre. That is difficult part.

NBS: Thank you for your time, and I wish you the very best in future.

APPENDIX B

Research work at the Alexsan Kopano telecentre in Alexandra and the Mamelodi Community Information Services centre (MACIS) in Mamelodi did not include recorded interviews. As such, information pertaining to the running of the two centres will not be based on interview transcripts. Although at the Siyabonga Telecente in Orange Farm the research did not include any recordings, the interview was in the form of a discussion of their progress report, which involved the discussion below. An insert of the progress report is also provided.

SIYABONGA MULTIPURPOSE CENTRE IN ORANGE FARM

B1 BACKGROUND[16]

The Siyabonga telecentre was established as a Section 21 Non-Profit Organisation (NPO) in October 1996 by Patricia Makoro (the director of the telecentre) and a group of women and youth "…to help people help themselves" (Interview) "through sharing skills and experiences" (Siyabonga Telecentre Progress Report, 2005).

The multipurpose centre is located along a main taxi route. It is also a fairly short distance from the Orange Farm railway station. As these two modes of transport are used by a relatively large number of residents in the area, assuming that Orange Farm is a poor peripheral area, the centre is fairly visible to the rest of the community.

Initially, the centre focused on activities such as sowing (women) and making bricks (male youth). It then incorporated catering and a bakery as the years went by.

However, in 2000 the Director of the Telecentre saw an example of a USA funded telecentre from the Limpopo Province shown to her by a 'friend' and decided to put a proposal through for funding to integrate ICTs in the multipurpose centre. The initial funding covered the purchase of 15 computers, a photocopier, scanner, printer and pay phones to start a phone shop.

Within 6 months after the telecentre was established, there was a theft of computers. This was reported to the USA, which kindly replaced the stolen computers within weeks of this unfortunate incident. This led to the prioritisation of young women (volunteers) over males (see section 2.2).

B2 ICT PROGRAMMES

[16] An Instructor at the centre provided me with the information on the background of the project.

ICT services offered at the multipurpose centre include public pay phones, photocopying, printing, typing, scanning, and Internet access. There are also training programmes that are run by ICT facilitators/instructors. These will be the focus of this section.

B2.1 Information Literacy Course

Enrollers to the course mostly include young people, between the ages of 10 and 28 years. Most of these people either, cannot afford to go to university and choose to enrol with the centre, or have not finished their matric and want to go into the IT industry. The information literacy course covers persons over the age of 15, within a three-month period, an introduction to computers, windows applications (MSWord, Excel, Access, PowerPoint) and an Internet usage aspect. It costs R 1,970-00. Although the telecentre uses a matric qualification as a prerequisite for enrolment, it only serves as a guideline.

A yearlong basic child literacy course is also offered to children between the ages of 10 and 14 years. It costs R 380-00.in order to accommodate the time schedules of children, this course is only run on Saturdays for 3 hours during the school term period.

B2.2 Volunteers

ICT instructors run these courses, and at present there are two. The instructors are usually persons who have done the computer training courses at the centre. In addition, they have additional qualifications including an International Computer Driving Licence. Some instructors have left the centre to open their own ICT service centres around the area.

The telecentre also depends on volunteers who give their time to help at the centre. There are volunteers who come from both international and national locations. So far, there have been three international volunteers who come in through AFS Interculture South Africa[17]. They spend 6 months offering assistance on whatever they can at the centre[18].

There are also volunteers from Orange Farm and other surrounding areas like Sebokeng, Lenasia, Everton, and so on. These volunteers are accessed through posters posted at taxi ranks and other public places. Basically, the volunteers at the telecentre help people type CVs,

[17] American Field Service (AFS) is an international volunteer programme aiming at promoting intercultural exchange and learning. More information on the South African AFS programme can be accessed at: http://afsweb.afs.org/SouthAfrica.nsf/Pages/About+us.

[18] Community based organisation that would like to have volunteers working for them for a period of 6 months should go to http://afsweb.afs.org/SouthAfrica.nsf/pages/volunteers

assignments, and with other ICT-services offered at the centre. These more localised volunteers usually stay with the centre for three months.

Since the theft incident, the centre has since only taken in female volunteers, as young males are perceived to be a security threat.

Appendix C

Stones, L **"**Limpopo farmers sell fresh produce by cellphone", **Business Day –** *Company News: Technology at Work,* Thursday, 7 July 2004, pg18

Three companies — Vodacom, Alcatel and Senegalese software developer Manobi — have set up a project to give far-flung communities access to markets

THE hand-embroidered skirts and bead-encrusted shawls of Makuleke village in Limpopo have been joined by another equally decorative accessory — the cellphone.

Farmers in the rural community have become the first in SA to test a project giving them instant access to produce prices over their cellphones.

The farmers on the edge of the Kruger National Park have struggled to make decent money from their crops, not realising the tomatoes and onions they resell for a few cents at the local market were fetching multiples of those prices for middlemen who resold them at the produce markets of Johannesburg and Pretoria.

Now the villagers can check the going rate by accessing a farming website over their handsets. They can invite buyers to strike a deal for their crops via SMS, and see which fresh produce the tourist game lodges are looking for that morning.

Daniel Mashava does not look very dexterous with his cellphone yet, as he taps in his user name and password and picks the menu option for vegetable prices.

"If I can manage to use this now I have been trained, I can see the prices from home rather than go to Johannesburg with my produce before I see the prices," he says. "I know how much I can get and I can decide to sell it locally if the prices are not worth travelling for."

By sending an SMS he can tell potential buyers about his crops. "If someone wants what I have to offer, I can get their response by SMS or by phone," he says. If a deal is struck, he knows he has a buyer before he treks to the city.

For farmers who cannot make that journey, they can at least ensure traders at the local market pay a far more realistic price for crops that will be resold later.

Prevailing prices from the major markets are entered into the database regularly, so users can see what their crops are worth.

“It’s very easy to use,” says Norman Josini. “Even old people who can’t read the English words can learn.” He presses the keypad and a little pink apple icon pops up, showing a price of R1,20 for a kilo of crisp pink apples.

The farmers can also build up relationships with buyers, so they can plant the particular crops their contacts will require in the coming months, Josini says.

The technology has been supplied by Vodacom, Alcatel and Manobi. Vodacom has erected a cellular base station and provided 360 SIM cards and airtime vouchers. Alcatel provided 200 handsets and the hardware to support the system. Cellular software developer Manobi created the trading system and is training the farmers to use it.

Dakar-based Manobi piloted the system in Senegal. Now it ambitiously hopes that bringing its software to SA is the first step towards Africa-wide expansion.

In Senegal some rural farmers have increased their income almost 50%, earning an extra R7000 a year for every hectare.

“It’s just like the stock market, where knowing when to sell is important,” says Manobi founder Daniel Annerose.

He estimates the project has cost the three companies about R5,2m. Manobi spent R2,4m tailoring the software to South African needs, Vodacom invested about R1,6m and Alcatel R1,2m.

So far about 100 farmers are beginning to use the system, with plans to train another 100 in coming weeks.

The project is also generating more business with local restaurants and guest houses, which can use the internet to post their requirements onto the database.

Makuleke needs all the help it can get. The community is one of the most remote in SA, formed to house people displaced by the apartheid government. Its three villages are home to almost 20000 people. To fight high unemployment, village elders set up an irrigation project and encouraged people to grow crops to sell. But it failed from a lack of funding, a lack of communications and a lack of marketing skills, says treasurer Gibson Makuleke.

Alcatel, Manobi and Vodacom have revived the business, with their technologies helping to alleviate poverty and make the community sustainable, he says.

“Cellphones have been handed out to farmers who attended intensive training, and today they are able to decide which products are to be marketed where, when, and for how much.”

The communities are improving their revenue, sales margins and their quality of life, says Alcatel vice-president Thierry Albrand. The technology partners are benefiting by taking their products to new audiences.

The farmers pay for their SMS and voice calls, but it is well worth the fee, says cotton farmer Johanne Ndluvu. “When I want to take my cotton to market, I look at how much it gets in Johannesburg, how much in Pretoria and how much in Tshwane. Now I know where I can get big mone