Appendix 8: ISRG Working Paper 1

ISRG

Information Society Research Group
Working Paper No. 1

Managing Distance: the Social Dynamics of Rural Telecommunications Access and Use in the Eastern Cape, South Africa

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February 2005

LSE UCL QUT Queensland University of Technology Brisbane, Australia THE UNIVERSITY OF ADELAIDE AUSTRALIA

Information Society Research Group (ISRG)

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Working Paper Series

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ISBN 1-921083-01-8 (PDF)

Managing Distance: the Social Dynamics of Rural Telecommunications Access and Use in the Eastern Cape, South Africa

Abstract / This paper examines rural telecommunications access and use amongst poor village households in the Eastern Cape, South Africa. Discussion is based upon a content analysis of 165 telephone calls, as well as a broader information and communication technology (ICT) ownership, access and use survey undertaken in 50 households within a number of rural villages in Mount Frere District. These data are complimented and supported by qualitative data emerging from a longer-term DFID-funded study of ICT use and social communication practices amongst poor people within the same district. The purpose of the paper is to: (i) question existing notions of telecommunications access; (ii) assess the extent to which rural inequalities are exacerbated or ameliorated by telecommunications access; and (iii) examine how telecommunications are enlisted as a strategic tool for maintaining kin-based redistributive networks and enhancing livelihood sustainability by poor households.

Keywords / Telecommunications, livelihoods, networks, poverty, South Africa.

Introduction

This paper examines telecommunications access and use by poor households within the Mount Frere District of Eastern Cape, South Africa. It problematises notions of universal telecommunications access by way of an examination of the social practice of communal cellular phone use. This analysis is supported by a discussion of how telecommunications access has been rolled out in rural areas in South Africa ostensibly through small information and communication technology (ICT) enterprises. These enterprises, in private homes or in *spaza* shops (general stores), have penetrated rural villages and affected significant changes in the way rural people manage aspects of distance in extended kin-networks, and by association, individual and collective livelihood strategies. The historical legacy of apartheid in South Africa, of urban influx controls designed to stem the flow of rural to urban migration or restrict it to men with temporary rights to urban residency, manifests itself in households that are literally 'stretched' across the country (Bailey et al. 1984, Worden 1994, Bickford-Smith 1995, Robins 1999, Davenport and Saunders 2000). Migration to urban centres from the historically impoverished and underdeveloped rural areas, such as the former Bantustans (homelands) of Transkei and Ciskei in the Eastern Cape, still constitutes a fundamental livelihood strategy for poor households making the management of 'distance', principally through telecommunications use, a critical aspect of the everyday lives' of many poor people.

The Mount Frere rural households examined in this paper were selected with the assistance of University of Western Cape's (UWC) Chronic Poverty Research Centre (CPRC) and School of Public Health (SOPH), and can be considered as 'representatively' poor within the region (see Puoane et al. 2001).[1] CPRC quantitative survey data (n=10,544) attests to this poverty and reveals that 90% of households in rural Mount Frere live well below the South African 'official' poverty line of R352 (US$56) monthly income per adult equivalent (de Swardt 2003). The average monthly income per adult equivalent in the region is a meagre R93 (US$15) and a high dependency on social welfare grants and remittances was found to exist, which can be correlated against very high levels of rural unemployment. The Mount Frere region is also significantly food insecure, with 83% of rural households experiencing 'periods of extended hunger' annually (de Swardt 2003: 10). Data also highlights the very poor health status of many households in Mount Frere, the debilitating impact of HIV/AIDS and TB on livelihood sustainability and the inability of local health services to meet the health needs of the poorest (de Swardt 2003).

The ownership and use of information technologies such as cellular telephones within poor rural households and the wider communities in which they are embedded raise new questions about what it means to be poor, how poverty is experienced and how insecurity is negotiated. In addressing some of the social, political and economic dynamics, implications and contradictions evident in emerging rural cellular telecommunications access and use patterns this paper also speaks to the substantive lack of social analysis within contemporary debates surrounding human development and the digital divide (Wilson 2002, Suoranta 2003). This divide is posited on the perceived, but often uncontextualised and undifferentiated, technological and informational gap between the 'poor' and others (Rodriguez and Wilson 1999, Gerster and Zimmermann 2003, Pigg and Crank 2004). It is routinely constructed through comparisons of teledensity and ICT ownership statistics in rich and poor households (International Telecommunications Union 2001, UNDP 2001). Though of limited explanatory use, national level statistics reveal that telecommunications access and ownership in

South Africa remains sharply differentiated along class, racial and gender lines, with both still being skewed in favour of minority white and coloured populations, with the historically disadvantaged black population representing the last racial group to enter the cellular market in a significant way (Statistics South Africa 2001). This differentiation in access and ownership is recognised by the South African Government who in pressing for the more modest goal of universal telecommunications access, rather than service (which implies both access *and* ownership), query whether telecommunications will increase:

> … inequality between an *information elite* and a majority living in *information poverty*? Or will these technologies promote information literacy throughout our country and work as an infrastructure to promote development?
>
> (Government of South Africa 1998: 1)

Rodríguez and Wilson (1999) similarly identify some of the potential socio-economic and political costs, consequences and inequalities that may be driven by a lack of public access to ICTs, telecommunications included. In the South African context data reveals that these may include unequal access to the state, to various livelihood opportunities, to health information, to private institutions such as banks and critically, to kin who may potentially be able to remit money and who reside in urban areas. Here, Massey's (Massey 1993) work on the emergence of a disempowered underclass that is *apart* from globalisation, rather than *a part of it*, echoes such inequalities. Others, like Mansell (2002), Mitra and Watts (2002) and Selwyn (2004) take a slightly different and more optimistic line, identifying the potential of ICTs to empower the poor through participation in local and national information flows, contexts and domains, as well as emerging economic terrains (cf. Appadurai 1990). South African telecommunications universal service and access definitions speak to these notions of inclusion, empowerment and participation, and are located in the broader discourse of the 'economic and social development benefits' that are popularly perceived to accrue from accessing and using telecommunications (Government of South Africa 1996: 102).

Whilst statistics help to define the 'digital divide' and give it form in a global, albeit abstract sense, seldom are such statistics drawn from highly localised studies within poor households in rural areas (cf. Bridges.org 2002). Equally, discourse posits some of the potential parameters and inequalities that the 'digital divide' may structure within poor communities. However, such discourse is incapable of revealing the extent to which, for example, telecommunications are deeply embedded within and framed by aspects of socio-cultural context. In poor rural households in the Mount Frere District these include the role of traditional authority, localised class dynamics and politics, food insecurity and sub-subsistence agriculture, the ravages of infectious disease and chronic ill-health, unemployment and the complexities of the extended social networks and social safety nets upon which poor households rely (Aliber 2003). Accordingly, this paper draws on a number of context-specific data sets, both quantitative *and* qualitative, and in doing so seeks to open a more socially and culturally grounded discussion that moves beyond inference and abstraction towards data-driven analysis of the socio-economic dynamics, costs and accommodations of telecommunications access and use.

Situating telecommunications in contemporary South Africa

Telecommunications services in South Africa comprise a mix of fixed-line and cellular networks and all providers are mandated to address the specific needs of under serviced areas such as urban townships and rural areas (Gillwald 2002a). In 1997 Telkom was granted the sole right to deliver 'national, international and local fixed line services, including public pay phones, for a period of five years to expire in May 2002' (International Telecommunications Union 2001: 6).[2] By the end of 2002 it was required to have installed 2.8 million new lines, with 1.7 million of these to be installed in areas with low fixed line teledensity (International Telecommunications Union 2001). Within this figure, 120,000 new payphones were also to be installed, catering principally to disadvantaged areas. In 2002 Telkom claimed that 98% of the population of South Africa lived within a 2-kilometre radius of a public telephone (Benjamin 2002). Despite Telkom having connected several million new fixed-line phones in the past 5 years, many of these have subsequently been disconnected due to failure to meet bill repayments, often as a consequence of a preference amongst poor households for mobile phones and the prevalence of copper cable theft in poor areas (Horwitz 1997, Harvey 1999, Horwitz 2001b, Engvall and Hesselmark 2004). Though mobiles have higher per second, minute or unit call charges associated with them, the nature of 'pay as you go' plans enables poorer users to budget

more effectively. Further, observational data from Mount Frere Town and the outlying villages in the district reveals that the universal fixed line service promises of Telkom have not been realised. Ranks of vandalised payphones line the main streets of many small towns in Eastern Cape, and the only fixed line infrastructure in evidence in villages – typically phones lines to post offices and the residences of tribal chiefs - last functioned in the late 1980s (Harvey 1999).

In comparison to the problems associated with fixed-line telecommunications expansion in townships and rural areas, the cellular market in South Africa is burgeoning and has witnessed stellar expansion to the point where 'container phones' (small enterprise public outlets converted from old shipping containers) are a ubiquitous feature of both urban townships and small rural towns.[2] Currently, there are three cellular operators, Vodacom, MTN and Cell-C, with the former two having been in business for just over 10 years.[4] Cell-C are a recent addition to the market, though all are bound by community service commitments within their operator licences that, like their fixed line competitor Telkom, requires the extension of lower cost public services to areas with low teledensity and infrastructure. In 2004 Vodacom was providing a cellular service to 9.7 million clients, MTN 5.2 million and Cell-C 3 million. Despite concerns in the immediate post-apartheid era of Telkom job losses, the cellular phone has been hailed as a fundamental tool of black economic, social and political empowerment in South Africa (Vodacom 2003, cf. Sridhar and Sridhar 2004 on India). To this end, Nelson Mandela has remarked that:

> … ten years after the [cellular] licences were awarded, there are … South Africans in every corner of this country talking on cellphones. They are ordinary people calling their loved ones, helping people in emergencies and doing business.
>
> (Vodacom 2003)

Universal access and small enterprise: a pro-poor dynamic?

Universal telecommunications service definitions typically centre on notions of availability, accessibility and affordability set within the context of extremely high (90%+) rates of ownership and connection that are more typical to highly developed economies (International Telecommunications Union 2001). Whilst these criteria address basic coverage, equality of access and costs, the South African Government recognises that this tripartite structure sets up a number of insurmountable conflicts for transition economies (Government Gazette 1998). Extending telecommunications services to remote areas is costly and typically, infrastructure expenditure is clawed back through higher call charges making access for poor people problematic. Instead a more moderate goal is offered, the aim of which is to 'provide universal, affordable access to all as rapidly as possible within a suitable and viable telecommunications system' (Government of South Africa 1998). The licensing of the three cellular operators and the move towards granting 'under-serviced area' telecommunications licences can be understood within a government logic of preference for private sector service extension to previously disadvantaged areas (Gillwald 2002a). To this end South African telecommunications policy states that:

> The telecommunications industry can play an enabling role by providing entrepreneurial opportunities for South Africans from historically disadvantaged communities in its own sector as well as in other sectors. In order to achieve the stated objective to support and strengthen the local industrial capacity and base for sustained development of telecommunications in South Africa, it is essential to support the economic empowerment of historically disadvantaged communities in the same context.
>
> (Government of South Africa 1996, Section 4.11)

If the regulatory telecommunications framework established by the South African Government aims towards the empowerment of previously disadvantaged groups, the mechanism of delivery for that empowerment and associated telecommunications universal access, is conceived firmly within the logic of Small, Medium and Micro Enterprise (SMME) logic. The aforementioned White Paper is explicit in its support of the SMME sector, revealing that they:

> … are recognised as an important component in the nation's development, particularly through their ability to create additional employment opportunities and promote technical innovation. These enterprises are often relatively labour intensive and are located within the communities they serve. In view of the importance of this sector in job creation, Government accords special emphasis for their use as a vehicle for empowerment of disadvantaged communities and will actively promote their development.
>
> (Government of South Africa 1996, Section 4.12)

Whilst Telkom public payphones remain a very significant plank of the universal access commitment, the cellular Community Service Obligations that have given rise to public 'container phones' in

townships and small rural towns across South Africa have brought unprecedented levels of telecommunications access to under serviced urban populations (Benjamin 2002). The 'container phone' outlets, though located in the community, are privately owned and are often acquired with the aid of black economic empowerment agency small loans, such as those provided by The Nations Trust. The community service commitments of the cellular operators Vodacom, MTN and Cell-C extend only to making available a discrete number of 'lines', which in this instance constitute individual cellular handsets, to disadvantaged areas. For example, Vodacom is required to extend 22,000 'lines' to such areas, though it is not responsible for ensuring that community access is served in an equitable way through this provision or for establishing an equitable distribution between urban and rural contexts. Accordingly, the community service commitments of the cellular operators has given rise to a rapid deepening of telecommunications access in many poor urban townships, giving rise at the same time to potential inequalities in access between urban and rural populations (Benjamin 2001).

Though more modest in scale, typically a stand-alone phone located in a private home or local *spaza* shop, rural phone businesses are emerging rapidly in many rural areas. The broad availability of the Global System for Mobile Communication (GSM) network in urban *and* rural areas has resulted in a host of third party companies, such as Psitek, who make the popular Adondo cellular phone system, and Thetha Thetha who market them, rushing to offer small business solutions for would-be rural entrepreneurs (www.thethathetha.co.za). Thus, the small enterprise sector has been critical in making the government universal access goal of having a public phone available to all within a 30-minute walk a potential reality, especially in poor and often remote rural areas. Nonetheless, due to extremely high levels of rural unemployment and the relatively high start up costs associated with ICT enterprises such opportunities tend to be pursued by rural elites able cover such costs. Qualitative data reveal that in many villages in the Mount Frere District ICT enterprises provide an additional household income, rather than a principal income. In global terms, the availability then of ICT enterprise possibilities, could be argued to widen income inequality.

Significant discussion of telecommunications service and access criteria, market deregulation and regulatory frameworks, as well as pro-poor telecommunications interventions *has* occurred, yet little is understood about how telecommunications may help realise certain extended social networks and how these networks can underpin and support often very marginal rural livelihoods (Government of South Africa 1996, Government of South Africa 1998, Harvey 1999, Benjamin 2001, Horwitz 2001b, Gillwald 2002b). Equally, little is understood about how social networks in turn redefine and significantly complicate notions of telecommunications access through the social practice of cellular phone borrowing in rural areas (Reck and Wood 2003). Importantly though, a lack of any such access may reflect processes that work to exclude particular groups of people, or conversely, incorporate them socially and economically on unequal terms (Sharp and Spiegel 1984, Hulme et al. 2001, Perret 2001, Seekings 2003).

The social dynamics of telecommunications access and use in Mount Frere District

Mount Frere District lies within Umzimbuvu Municipality, which was formerly part of the Xhosa homeland or 'Bantustan' of the Transkei. Historically, the area has seen considerable male out migration to urban centres such as Cape Town and to the mines around Johannesburg, thus establishing a complex set of flows between rural and urban areas that includes money, people, goods, values and mores. This practice has left many female-headed households within the district, though a trend towards a less gendered form of economic migration has emerged in recent years, this reflecting the increasing employment opportunities for women in urban areas and high levels of retrenchment in the mining sector (Casale and Posel 2001). The area, including Mount Frere Town, has a population of 290,000 people (Statistics South Africa 2001). The terrain is mountainous and rugged and many villages within the district are often difficult to access. This has meant that infrastructural development, especially health services and transport, has lagged behind other areas of South Africa and poverty is widespread (Aliber 2001; de Swardt 2003). Electricity and water provision is low within many rural areas, though some strides have recently been made by Eskom, the national energy supplier, to connect key institutions such as rural clinics to solar power sources and government supplied long-drop pit latrines are now a common sight in many villages.

Telecommunications use in contexts characterised by a high incidence of household poverty displays a level of complexity and economic rationalism not immediately obvious in everyday telecommunications practice in developed countries. Of fifty households surveyed in seven villages within the district, 28% were found to have at least one member who owned a cellular phone.[5] Given that these households were selected as being 'representatively poor' within the region, this statistic

alone constitutes a very significant finding, which is given added weight when one considers that that 90% of all households in the region fall below the official poverty line (de Swardt 2003). It suggests that ownership of cellular phones and telecommunication are, at a base level, important to poor households. Whilst ownership and access to telecommunications are clearly different things, the same household data reveal that 92% of all informants have access to public phones within their own or nearby villages, suggesting that the recent and extremely rapid penetration of public access telecommunications services into rural areas is 'demand driven'.

Figure 1: Village-level commodity ownership and ICT access for the poor in South Africa

Cell or terrestrial phone access	92%
Cell phone owned	28%
Radio	68%
Television	2%
Terrestrial phone ownership	0%

(n=50 households)

The vast majority of rural phone services in the Mount Frere region are typically run as small enterprises from local *spaza* shops or private houses and connect principally to the widespread Vodacom GSM network. One such household is that of Ma Rhadebe, a middle-aged woman living with her extended family in a compound in the village of Tshungwana. The compound has a small bottle shop within it and several other traditional mud-brick buildings, one of which doubles as both a bedroom and public phone point. Aside from two beds, a table against the back wall constitutes the only other furniture in the room and on it is placed an Adondo GSM community phone and control box.[6] Callers are charged R0.50c (US$0.08) for every 15-second unit, this being significantly more expensive than a Vodacom urban 'container phone' service at R0.85c (US$0.14) per minute. The additional charge for use of a rural Adondo phone is made up of a higher portion of profit for village-level entrepreneurs such as Ma Rhadebe, which helps to offset the generally lower volume of callers using the service in the more thinly populated rural areas. Ma Rhadebe bought the Adondo phone, which comes with a powerful aerial, a handset and unit for timing and costing the calls in the nearby town of Kokstad for R4,000 (US$642). Approximately R50 (US$8) of calls are made on the unit each day, giving the household a profit of R400 (US$64) each month.[6] The income derived from the Adondo phone is in addition to other income flows sustaining the household such as the profits from their bottle shop. Where modest phone use can be established the small entrepreneur can pay off the start-up costs in under a year. However, in villages with three or four Adondo outlets the scope to make a significant profit is reduced, making such enterprise initiatives relevant only to households that have a broader income base. In turn, many very poor households are excluded from the possibility of starting small ICT-based enterprises such as cellular phone services by virtue of the start-up costs and small profits.

The availability of privately owned public telecommunications services in rural South Africa is now widespread. The overwhelming majority (74%) of rural people make calls from public phones in rural areas, often in *spaza* shops, *shebeens* (taverns) or simply in a building located within a nearby homestead, such as with Ma Rhadebe's business. Only 6% of people make calls on their own cell phones, due principally to expense, which manifests itself as a basic lack of airtime. Cell phones were generally regarded to be easy to manage economically, because the principal outlay is the upfront cost of the actual phone and SIM card, which can be as low as R299 (US$48) or cheaper for phones acquired through informal channels. Many phones are gifted or older models passed on by better-off relatives residing in urban areas. Other (10%) informants made calls at cheaper urban 'container phones' on occasions when they had to travel to town, usually to purchase bulk food supplies for transport back to the village by local taxi, whilst another 10% revealed that they made no calls at all. Many of the householders surveyed (68%) make calls from public cellular phone services that are located within a walk of 30 minutes or less (the goal of the South African universal telecommunications access targets), which given the low-density of rural communities, constitutes village-level horizons.

The manner in which telephone calls are received in rural South Africa reflects the significance of local kin and non-kin social networks and complicates notions of universal telecommunication access. Some 32% of the households surveyed confirmed that they received calls on a neighbour's cell phone. Qualitative data indicates that numerous surrounding households may rely upon an individual cell phone owner. Siyabonga is the 17-year-old male head of a household in Mpoza village. His father died in 2003 and his mother is currently working in Cape Town as a domestic to a white family. Though he has no cell phone, he does have access to his aunt's cell phone. She lives in a compound down the hill from his own and he only uses her phone to receive calls, rather than

make them. Siyabonga's mother calls every Saturday to ask how he is coping and whether her younger children have enough to eat. She also calls when she is going to send money. Conventionally, this is sent by bus to Mount Frere Town and a different aunt who lives nearer to Mount Frere Town collects it from the bus driver and then passes it on to the aunt that lives close to Siyabonga, who in turn passes it on to the intended household. The remittance call is strategic and allows Siyabonga to know exactly how much he will receive and when. Siyabonga also makes calls to his mother; periodically on Sundays, from a phone in a shop an hour's walk each way in a nearby village. He spends up to R20 (US$3.20) each week making calls to his mother, who resides in the township of Gugulethu in Cape Town, just to feel a sense of family connection and to 'hear her voice'.

Figure 2: Calls received by villagers

Calls received on neighbour's or relative's cell phone	32%
Calls received at public phone	12%
Calls received on own cell phone	22%
No calls received	34%

(n=50 households)

The use of telecommunications in rural areas forges and maintains both economic and emotional ties and analysis of 165 calls made or received by poor households in Lugangeni village confirms the extent to which telecommunications underpins and makes sustainable, albeit marginally, rural households. With regard to the content of the telephone calls made, 9 broad categories emerged from informants' content descriptions of their discussions These categories are generalised as discussions about: (i) agricultural practice and inputs; (ii) recent deaths and funeral arrangements; (iii) social welfare payments; (iv) health issues; (v) non-specific discussion with kin (kin-social); (vi) non-specific discussion with friends and acquaintances (*non-kin social*); (vii) financial remittances from friends or relatives; (viii) transport or mobility issues centring on visiting friends of relatives; (ix) work-related (job seeking or small/micro enterprise). Whilst calls that fall into the kin-social and non-kin social categories have no discernible purpose other than maintaining a connection with a 'loved one', they can be understood as playing a critical role in maintaining a presence in complex social and economic networks that may be 'stretched' over the immediate blanket of rural villages and beyond to regional and national cities. These social networks, as the case of the young man Siyabonga highlights, have a significant bearing on the success or failure of rural households to secure income flows resulting from social welfare payments and remittances.

Figure 3: Calls made/received in villages by content

Agriculture	7%
Deaths and funerals	4%
Health	18%
Kin-social	19%
Non-kin social	7%
Remittances	17%
Social welfare payment-related	10%
Transport and mobility	12%
Work-related	6%

(n=165)

As elaborated above, social networks also enable technological resources, such as cellular phones to be realised when needed. The practice points to the need to develop a more complex and nuanced understanding of telecommunications access that locates it within networks that encompass clusters of households in rural villages, as well as kin-based connections to local towns and national cities. Living in rural areas accentuates reliance on such networks and this is reflected in the higher number of calls made or received by villagers concerning remittances (17%) and social welfare payments (10%) than in comparative analysis undertaken in Mount Frere Town and Cape Town. The very significant figure of 32% of calls received on a neighbour's or relative's phone highlights a sociality to cellular phone use that often involves an initial call being made to the cell owner to go and get the person the caller is trying to reach. The cell owner may then send a runner, usually a child, to locate that person and bring them to receive a subsequent call made later. Given the typically limited duration of calls (which typically last no more than a couple of minutes), the only cost to the cell owner is a limited about of battery power, which tends to be given freely.

Reliance of rural households on urban kin who remit money is significantly facilitated by cellular telecommunications. Women, often-powerful matriarchs who have had to head households in the absence of their migrant labouring husbands, are critical to such modes of communication, with 93% of all remittance calls (n=27) in rural areas being made or received by women. Those calls are also, overwhelmingly, placed to immediate family members (89%) located in regional cities (30%) such as Port Elizabeth or East London and national cities (56%) such as Cape Town, Johannesburg and Durban. Broader statistics on the geographical connections (rural to rural, rural to urban and urban to rural) that are made possible through telecommunications reveals a significant number of all calls are made to regional and national cities. This further evidences the notion of the 'stretched' household and the fundamental need to manage distance effectively if particularly rural households are to be sustained and reproduced. The investments then that are made in telecommunications are both social and financial. First, there is the maintenance of localised social networks that facilitate access to the cell phones of others. Second, there are the routine and often significant financial outlays committed to telecommunications that serve to maintain 'stretched' kin networks. Third, women significantly facilitate these networks.

Figure 4: Calls made to or received by villagers by destination

Village	4%
Local village	4%
Local town	17%
Regional town	16%
Regional city	23%
National city	36%

(n=165)

Calls made from villages typically cost more than calls made from urban container phones and quantitative and qualitative data reveal that significant investments are made in telephoning kin, that the average cost of calls is high relative to low monthly incomes, and that higher cost calls are typically made to regional and national cities. When remittance calls are examined, the same skew towards regional and national cities is reflected, identifying that rural households invest money in telecommunications to help them realise money in the form of remittances from their extended kin network. The broader ICT usage survey data derived from 50 poor village households in the Mount Frere District reveals that on average each spend R26 (US$4.17) on telecommunications (calls made). With monthly household incomes that are as low as R200 (US$32), this constitutes a considerable proportion of monthly household income. The relatively high cost of calls also makes for telephone discussions that are information intense and which focus on a very specific problem or issue, such as where to collect a remittance and how much it will be.

In South Africa universal telecommunications access for rural areas is a rapidly emerging reality, built on a deepening of the market for cellular phones, especially amongst black people, and the availability of ICT small enterprise opportunities for rural elites in the form of rural public phone businesses. This has created an economic dynamic that has enabled very poor households to both receive and make calls from rural areas without having to travel to often distant towns. In turn, this has enabled them to reorientate themselves in the way they manage distance within an economy that, for poor black people, has been historically structured as both marginal, but also profoundly relational, kin to kin, rural to urban and vice versa. The ability to manage distance, to tap into social networks and claim remittances constitutes a critical, though often overlooked, aspect of rural livelihood strategies and their maintenance. Nonetheless, access to telecommunications, both in a physical and economic sense need to be qualified.

The data presented in this paper whilst speaking to the deeply embedded role of telecommunications in rural livelihoods also identifies a number of fundamental inequalities. Rural people face higher call charges than urban populations. They may have to walk long distances to access services. They often have to rely on the kindness of kin or neighbours to receive calls. Qualitative data reveals that many very poor households struggle to afford any sort of telecommunications access and signals that further analysis of the inequalities that they structure is required (and which will be forthcoming from this research). The household of Elsie Matshuba is a case in point. Elsie's husband was retrenched from the mines on the mid-Rand some years previously and now earns a little money as a caretaker. The family has access to a small garden and grows around 50kg of maize a year, which is quickly used up. Elsie has four teenage sons, none of whom is eligible for child support grants. Her daughter went to look for work in Cape Town in 2001, leaving her own child to be cared for, in an attempt to ameliorate the household's poverty. In the interim, Elsie's neighbours, a couple with two

teenage children, both died of AIDS and she agreed to take in their son, who was a close friend of one of her own sons. None of Elsie's sons has any work, even informal, and the household struggles to make ends meet. Accordingly, she has been unable to afford regular calls to her daughter and as a consequence has not been in contact with her for over two years. Elsie fears she may have been killed or died of disease. Because of the failure of the household's migration strategy she finds it difficult to mobilise remittances through extended networks. In a sense, the household has been unable to manage distance effectively and their relative poverty makes telecommunications a luxury that often cannot be afforded. The entry costs to telecommunications access are still too high for her to make effective use of them. In turn, this points to some of the concerns raised by commentators of the 'digital divide', of the potential for ICTs to enhance the livelihood opportunities of some, whilst at the same time widening inequality gaps, even between the poor and the very poor.

Conclusion

Concerns over the potential for ICTs to create or exacerbate rural inequalities then are real, and the small enterprise opportunities that telecommunications provide are conventionally gained by rural elites who typically have access to formal salaried government employment, for example, as nurses, teachers or civil servants, and who often have family members who have successfully negotiated rural to urban economic migration. The solidity of the economic base of these rural households enables them to offset some of the risks associated with small ICT enterprise start-up and affords them a modest monthly profit. Nonetheless, the investments made by rural elites in cellular phone enterprises has at the same time enabled the South African Government to realise its modest universal access commitments of allowing 'everyone in the country to have access to a telephone that works within a reasonable distance and at a reasonable cost' (Government of South Africa 1998: 9). Interestingly, it appears to be the private sector, rather than the state that has engineered this access.

With telecommunications access deepening in rural areas, the question arises as to its net effect on poor households in particular. In absolute terms, access to telecommunications is often still beyond the reach of the very poorest and therefore ICTs could be argued to constitute both a driver of inequality and an indicator of chronic poverty (see Aliber 2001 for a discussion of chronic poverty in South Africa). Further, income inequality between the richest and poorest may widen as a result of the enterprise opportunities that can be gained by the former and not the latter. However, the preliminary quantitative and qualitative data presented in this paper do highlight the extent to which telecommunications can very quickly become embedded in the livelihood, migration and welfare strategies of the poor. Evidence from poor village households in the Mount Frere District indicates a significant monthly financial outlay on cellular telecommunications that needs to be further contextualised within the types of investments poor households make, the vulnerabilities they face and the strategies that they engage for ameliorating that vulnerability.

Notes

1. The assistance of Andries Du Toit and Cobus de Swardt of the University of Western Cape's (UWC) Chronic Poverty Research Centre and David Sanders of UWC's School of Public Health (SOPH) is gratefully acknowledged. Also, the work of Zuko Ndamane, Xakathile Dabula and Sibongile Mtini, who were instrumental in assisting with data collection, deserves a special mention.

2. This period has since been extended by virtue of the delays associated with the issuing of a licence for a second national fixed line operator. In late 2004 a second licence was awarded to a consortia including Transnet, Eskom, the black empowerment organisation Nexus and the network operators, Two Consortium and CommuniTel.

3. Initially, the African National Congress (ANC), South African National Civics Organisation (SANCO) and Congress of South African Trade Unions (COSATU) alliance opposed the licensing of Vodacom and MTN in the early 1990s prior to democracy because they were fearful of the negative impact on Telkom jobs (Vodacom 2003).

4. Vodacom is a joint venture between Telkom and UK's Vodafone and MTN (Mobile Telephone Network) is a consortium of M-Net, Cable and Wireless and NAFTEL (a black business group and Transtel (Horwitz 2001a).

5. The Adondo allows owners to offer a range of services, including routine telephony, fax and potentially other data applications such as 'virtual vouchers' for cell phone airtime and electricity. Such services are already well established in many urban contexts within South Africa, though are not widely used in rural areas.

6. The household buys R1000 (US$160) airtime each month for the Adondo and get R400 (US$64) airtime free, which constitutes the profit margin. They deposit the money for the airtime in the Mount Frere Standard Bank who transfers it to the Vodacom regional head office in Durban. Once the credit has gone through they phone the Vodacom office in Durban and their phone is automatically credited with the airtime. Within villages with

more than one phone outlet there is potential for competition through lowering profit margins, though call rates were seldom found to vary for Adondo providers.

References

Aliber, M. 2001. Study of the Incidence and Nature of chronic poverty and Development Policy in South Africa. Chronic Poverty Research Centre Background Paper 3. Cape Town: University of Western Cape.

Aliber, M. 2003. Chronic Poverty in South Africa: Incidence, Causes and Policies. *World Development* 31(3): 473-490.

Appadurai, Arjun. 1990. Disjuncture and Difference in the Global Cultural Economy, in M. Featherstone (ed) *Global Culture. Nationalism, Globalization and Modernity*. London: Sage. pp. 295-310.

Bailey, S. Burton, M. and Cole J. 1984. *Khayelitsha: new home - old story.* Cape Town: The Surplus Peoples Project.

Benjamin, P. 2001. Does 'Telecentre' mean the centre is far away? Telecentre development in South Africa. *The Southern African Journal of Information and Communication* 1(1), electronic resource.

Benjamin, P. 2002. Reviewing Universal Access in South Africa. *The Southern African Journal of Information and Communication* 2(1), electronic resource.

Bickford-Smith, V. 1995. South African Urban History, Racial Segregation and the 'Unique' Case of Cape Town? *Journal of Southern African Studies* 21(1): 63-78.

Bridges.org. 2002. Taking Stock and Looking Ahead: Digital Divide Assessment of the City of Cape Town. Cape Town: Bridges.org, City of Cape Town.

Casale, D. and Posel, D. 2001. Why are more women looking for work? A study of female labour supply in South Africa, 1995-1999. *DRPU/FES conference on Labour Markets and Poverty in South Africa.* Johannesburg.

Davenport, R. and Saunders C. 2000. *South Africa: A Modern History.* Cape Town: Macmillan.

De Swardt, C. 2003. A crisis of imagination? Liberating local government and other agencies to experiment with creative solutions. Summary notes from Goedgedacht Forum for Social Reflection, Cape Town, South Africa.

Engvall, A. and Hesselmark O. 2004. Profitable Universal Access Providers, Report for SIDA, Stockholm, Sweden.

Gerster, R. and Zimmermann. S. 2003. Information and Communication technologies (ICTs) and Poverty reduction in Sub-Saharan Africa: a Learning Study Synthesis*,* Gerster Consulting, Switzerland.

Gillwald, A. 2002. Under-serviced Area Licences in South Africa: Steps to Achieving Viable Operators. LINK Policy Research Paper Series No. 3. WITS University, Johannesburg, South Africa.

Gillwald, A. 2002b. Experimenting with institutional arrangements for communications policy and regulation: the case of telecommunications and broadcasting in South Africa', *The Southern African Journal of Information and Communication* 2(1), electronic resource.

Government of South Africa. 1996. White Paper on Telecommunications Policy. Pretoria: Ministry of Posts, Telecommunications and Broadcasting.

Government of South Africa. 1998. Discussion Paper on Definition of Universal Access in Telecommunications in South Africa, *Government Gazette* 400(19397), electronic resource.

Harvey, C. 1999. Telkom South Africa, Fuqua School of Business, Duke University, USA.

Horwitz, R. 1997. Telecommunications Policy in the New South Africa: Participatory Politics and Sectoral Reform. *Media, Culture and Society* 19(4): 503-533.

Horwitz, R. 2001a. Negotiated Liberalization: The Politics of Communication Sector Reform in South Africa', in N. Morris, and S. Waisbord (eds) *Media and Globalization: Why the State Matters*. Boulder, Colorado, USA: Rowman & Littlefield.

Horwitz, R. 2001b. *Communication and Democratic Reform in South Africa.* Cambridge: Cambridge University Press.

Hulme, D. Moore K. and Shepherd, A. 2001. Chronic poverty: meanings and analytical frameworks, Chronic Poverty Research Centre Working Paper 2, University of Manchester.

International Telecommunications Union. 2001. Broadband: the case of South Africa, *Regulatory Implications of Broadband Workshop*, ITU, Geneva, Switzerland.

Mansell, R. 2002. From Digital Divides to Digital Entitlements in Knowledge Societies. *Current Sociology* 50(3), 407-426.

Massey, D. 1993. Power-Geometry and a Progressive Sense of Place, in J. Bird, B. Curtis, and T. Putnam (eds) *Mapping the Futures*. London: Routledge.

Mitra, A. & Watts, E. 2002. Theorizing cyberspace: the idea of voice applied to the Internet discourse. *New Media and Society* 4(4): 479-498.

Perret, S. 2001. Poverty and Diversity of Livelihood Systems in Post-Apartheid Rural South Africa: insights into local levels in the Eastern Cape Province. *Paper presented at the 74th Seminar of the European Association of Agricultural Economists.* Imperial College, Wye.

Pigg, K. and Crank, L. 2004. Building Community Social Capital: The Potential and Promise of Information and Communication Technologies. *The Journal of Community Informatics* 1(1), electronic resource.

Puoane, T., Sanders, D., Chopra, M. 2001. Evaluating the Clinical Management of Severely Malnourished Children - a Study of Two Rural District Hospitals. *South African Medical Journal* 91(2): 137-141.

Reck, J. and Wood, B. 2003. What Works: Vodacom's Community Services Phone Shops: providing telecommunications to poor communities in South Africa. World Resources Institute: Digital Dividend, Michigan Business School, UNC Kenan-Flager Business School.

Robins, S. 1999. Bodies Out of Place: Crossroads and Landscapes of Exclusion, in H. Judin and I. Vladislavic (eds) *Blank: Architecture, Apartheid and After.* Cape Town: David Philip Publishers.

Rodriguez, F. and Wilson, E. 1999. *Are Poor Countries Losing the Information Revolution?* Center for International Development and Conflict Management, University of Maryland, USA.

Seekings, J. 2003. Social Stratification and Inequality after Apartheid: The Reproduction of Disadvantage and Inequality in Post-Apartheid South Africa. *North Eastern Workshop on Southern Africa*, University of Vermont, Burlington, USA.

Selwyn, N. 2004. Reconsidering Political and Popular Understandings of the Digital Divide. *New Media and Society* 6(3), 241-262.

Sharp, J. and Spiegel, A. 1984. Vulnerability to impoverishment in South African rural areas: the erosion on kinship and neighbourhood as social resources. *Conference of the Second Carnegie Enquiry into poverty and development in Southern Africa.* University of Cape Town, South Africa.

Sridhar, K. and Sridhar, V. 2004. Telecommunications Infrastructure and Economic Growth: Evidence from Developing Countries. http://www.nipfp.org.in/working%20paper/wp14.pdf

Statistics South Africa. 2001. *Census 2001.* Pretoria: Government of South Africa.

Suoranta, J. 2003. The World Divided in Two: Digital Divide, Information and Communication Technologies, and the Youth Question. *Journal for Critical Education Policy Studies* 1(2), electronic resource.

UNDP. 2001. *Human Development Report: Making New Technologies Work for Human Development.* New York, USA: UNDP.

Vodacom. 2003. *Vodaworld: Vodacom Milestones*. Johannesburg: Vodacom.

Wilson, M. 2002. Understanding the International ICT and Development Discourse: Assumptions and Implications. Unpublished paper, LINK Centre, WITS University, Johannesburg, South Africa.

Worden, N. 1994. *The Making of Modern South Africa: Conquest, Segregation and Apartheid*. Oxford: Blackwell Publishers.