ISRG

FINAL REPORT

Information Society: Emergent Technologies and Development Communities in the South

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Information Society Research Group (ISRG)

ISRG is a UK Department for International Development (DFID) funded university consortium that comprises University College London, Queensland University of Technology, The London School of Economics and The University of Adelaide. The research group draws together institutions and researchers with an interest in producing qualitative insights into the digital divide and processes of communications for development.

Background and Objectives

The DFID SSR-funded research programme, 'Information Society: Emergent Technologies and Development Communities in the South', began in June 2003 and has run for two years. The project started with the premise that sustained qualitative research into the access and use of information and communication technologies (ICTs) by poor people in the South is significantly absent in discussions of the digital divide, information inequality and poverty. Critically, the research took a broad view of communications technologies and sought to reveal the extent to which processes of electronic, mass mediated and everyday social communication practice converge in distinct and localised 'communicative ecologies'.

Though considerable attention has been given in recent years to the role of ICTs in development, broad assumptions tend to be made about the perceived social and economic benefits in low-income communities. A further goal then was to highlight, through long-term qualitative research, how poor communities use ICTs and what this use facilitates. This echoes DFID policy that requires ICT interventions to be 'based upon a thorough understanding of the social, economic and political dynamics and constraints that can variously enhance and negate the developmental potential of ICTs' (McNamara, Marker and Wallace 2002). Moreover, the research approach stressed the need for detailed local knowledge of location-specific configurations of ICTs and poverty, and for comparative analysis of differences and similarities between different development contexts.

In response to both the gap in qualitative knowledge relating to ICTs and development, and the need to generate more detailed accounts of the social, cultural and political dynamics that constrain or facilitate ICT interventions and pro-social communication more broadly, a team of researchers (Daniel Miller, Andrew Skuse, Don Slater and Jo Tacchi) came together and established a research group (Information Society Research Group). This group works in partnership with local institutions in pursuit of its research agenda in the four countries chosen for the study, India, Ghana, South Africa and Jamaica (see Appendix 1). In each country, in order to gauge differences in uptake and use of ICTs, an urban and rural research site was chose. The purpose of this strategy was to ensure some basic comparability between the four countries. Details of the individual contexts of research, as well as country specific summary findings can be found in Appendices 4-7.

Methods

The methods used in the research were principally qualitative, though limited quantitative survey work was undertaken to establish basic indices of ICT ownership, use and household income levels. The research was structured over two years, with a six-month organisational and background research phase, followed by a minimum of one year of intensive fieldwork in each country, split variously between the chosen urban and rural sites. Within each country a researcher (Thomas Cousins, Janet Kwami, Tripta Chandola, Heather Horst) was recruited to conduct research for a year. This research was complimented by regular intensive work in the urban and rural field sites conducted in conjunction with the lead researchers.

Broad comparability between the four projects was ensured by working in both rural and urban sites in each country; by conducting semi-structured surveys with comparable questions in all sites; by agreeing and regularly revising a list of key themes which were addressed in interim reports on each country; and through discussion during research and analysis phase, both on-line and in face-to-face meetings of the researchers.

The research employed a bundle of qualitative research tools that can be collectively referred to as 'ethnography'. Well-established in the social sciences and particularly anthropology, ethnography implies the long term and embedded study of communities, with the researcher usually residing in the community in which work is being carried out. The

approach uses a combination of methods (participant observation, semi-structured interviewing, informal interviewing, focus group discussions and biographical surveying, as well as participatory techniques such as role-playing, community mapping and transect walks) to build up a data-rich picture of society, economy and polity.

This project deployed the concept of 'communicative ecology' to organize ethnographic research and analysis: in each community, we studied the full range of available communicative resources and the social networks that assembled and used them in different ways. This allowed us to define ICTs broadly to include not only new mobile and digital media, but also radio, television, video, print and visual media; and to look at their embedding in specific and closely studied poverty contexts. Specific ICTs were not separated off from either other media or social contexts of use.

This approach allows us to identify ICT opportunities and constraints in terms of how people actually understand, use and integrate different media in their communications and livelihood strategies. We can then connect these findings to specific policy concerns by indicating, for example (i) how poor people and communities maintain social networks and manage remoteness, itself a key factor in chronic poverty; (ii) the extent to which ICTs and social communication facilitate disease prevention through awareness raising or through the provision of support to carers; (iii) the extent to which ICTs enable more efficient community organisation and the realisation of certain rights to goods and services; (iv) the extent to which ICTs support the delivery of education at all levels; (v) the extent to which ICT access and use is gendered or facilitates greater gender equality; (vi) the diversity of livelihood strategies in which poor people engage and the extent to which these are informed or facilitated by ICTs and social communication. More broadly, the ethnographic approach allowed us to study the actual uses and understandings of media and communication with which development initiatives have to engage in order to be effective in specific poverty contexts.

Summary findings

Ethnographic method informs research in a number of broad categories of relevance to the achievement of the Millennium Development Goals and to DFID's related global poverty reduction agenda. These categories are replicated in the summary findings for each country to enable broad comparability:

i. New networks and the management of remoteness
ii. Health and welfare
iii. Civil Society strengthening and rights
iv. Education
v. Gender Equity
vi. Livelihoods and economy

Before presenting findings under these specific categories, there are a number of general findings that emerge particularly from the comparative framework of the research:

- Mobile phone uptake is rapid, even in very poor communities, and this is based in large part on immediate perception of its practical uses in managing kinship, social and business networks; in three countries (India, Ghana and South Africa) network coverage of rural areas – rather than poverty per se – was the major impediment to adoption. Moreover, in all four countries, telecoms has generally provided a basis for extensive micro-enterprise and employment. By contrast, internet adoption was notably lacking in both practical uses and enterprise opportunities even in the one country (Ghana) with extensive urban adoption.

- More generally, poor communities tend to frame and adopt new media in relation to *communications* functions rather than information access. They do so on the basis of their perceived needs for social networking and connection; and by extrapolation from existing media that are understood and valued, such as phones and radio. Governmental, donor and NGO ICT policies – which are generally focused on the information diffusion capacities of new media – need to connect with and build upon these actual media uses and understandings.

- We note – in all sites - that it is critically important to identify ICT opportunities and constraints in terms of the complete local structure of communications (communicative ecology), investigating how newer media can be connected up with older ones and embedded in local social networks. Above all, there was a general tendency for both populations and policy-makers to identify 'ICTs' with internet and mobile phones, disconnecting them both from each other and from radio, TV, video and face-to-face communication. This often contrasts with local innovation (for example, in rural Jamaica, the combination of mobile phones and taxis to create ad hoc ambulance services). However, again, this seems to involve mobile phones more than internet, which is frequently treated separately from other media.

- Close attention to the locally specific structure of poverty is as important as the local structure of communication. For example, although remittances proved integral to livelihood strategies in all sites, the use of available media to manage them differed markedly in terms of features such as kinship structures, domestic versus international migration, and the importance of individual as opposed to kinship identities.

- Although ICT policies often rely on notions of community and citizenship, there are profound location-specific differences in the potential social bases for using ICTs for local empowerment. For example, while the Jamaica research indicates that the very notion of 'community' is inappropriate in a society marked by extreme individualism, in the South African urban case, civic activities are often a primary context through which new media are understood; the Ghana case lies somewhere in between, with recently emerging self-help groups now found alongside strong kinship networks, while in India extended families, gender and caste play important socially defining roles.

- ICTs had marked impacts on rural-urban relations, with the capacity either to widen gaps and exclusions or to increase connection and reduce the social and economic costs of maintaining rural-urban networks. Despite important differences between sites (particularly over governance strategies for managing this tension), this was an important theme in all countries with the partial exception of Jamaica (with a smaller geographical and population scale). However, as is the case in India, other factors such as gender determine the actual use of ICTs and their impact in managing such relations.

(i) New networks and the management of remoteness

- The availability of private and commercially operated cellular phones or public call offices in the majority of contexts researched has facilitated a level of inclusion for poor and remote communities into regional, national and international economic flows, particularly in the form of remittances.

- Increased access to telecommunications in all contexts has allowed new social networks to emerge and allowed for the easier maintenance of existing networks, which are often built around extended kin relationships and patterns of regional, national and international economic migration.

- Migration issues emerged as central to ICT uses and understandings in all countries, but with marked local and media differences in how this theme is developed. For example, international migration is central to Jamaica and Ghana; South Africa and India are defined by internal and largely rural-urban migration. These differences lead to the assemblage of different (or differently understood) repertoires of media resources. Use of ICTs for managing dispersed social networks always involves locally specific assemblages of different media and movements of people.

- This theme leads us to stress the importance of building on the communicative functions of ICTs for which there is perceived need and use, as well as popularity; and for integrating explicitly informational objectives into the use of ICTs for social networking. There are many opportunities to link existing and emerging technological networks with socially appropriate articulations of ICTs for development purposes.

(ii) Health and welfare

- In some cases, mobile phones were already found to mediate many aspects of health and welfare within the aforementioned networks, from routine calling to inquire about day-to-day health, to dealing with medical emergencies, deaths and burial arrangements. Issues of social welfare, such as interacting with the state for various grants, were not mediated by technology, but by interpersonal communication, often making it difficult for poor people or those living in remote communities to access the state and its institutions, often mediated by state or self-appointed gatekeepers. In communicative terms, the state remains a difficult 'interface' for poor people.

- Inadequate medical and welfare facilities frequently leads to ad hoc or traditional healthcare and support arrangements that depend on local networks and intermediaries. ICTs – in particular mobile ICTs such as mobile phones and PDAs as well as the existing infrastructure provided by radio – could facilitate the more efficient and integrated use of these networks and could make use of them to spread health information more deeply into communities.

- Health and welfare issues highlight the need to integrate a range of media and information intermediaries into communication systems (rather than to focus on single technologies – such as websites – for delivery of information). For example, in both Ghana and South Africa, there were numerous health education groups and NGOs, using face-to-face networks as well as existing media (such as posters and performance). In India health and welfare services and information are largely located in physical spaces that are difficult for low income and excluded groups to access (for various reasons) and could be enhanced by such multimedia communication systems.

- Mass mediated and interpersonal communications interventions into health, such as those centring on HIV and AIDS, were found in South Africa in particular to often be countered and confounded by rumours that encouraged sexual risk taking behaviour. Such diseases are particularly stigmatised in India with culturally sensitive awareness raising activities conspicuous by their absence.

(iii) Civil Society strengthening and rights

- Each communicative ecology researched displayed very specific aspects of social and community organisation. In South Africa a strong civil society sector is engaged in struggles over rights and services, many of which are facilitated by a complex confluence of electronically and socially mediated communications. Ghana, by contrast, showed low levels of ICT use by community organizations. In India the civil society sector would be aided by greater integration of electronic media, improving the circulation of information and better coordination of activities.

- Across all sites, we stress the need to go beyond a conventional, web-based e-governance style of information provision to build systems that combine (diverse) technical and social networks, and to do so in locally appropriate ways.

(iv) Education

- The field sites displayed different orientations to ICTs in education. However, there was throughout a marked lack of creative and coherent ICT educational policy appropriate to poor communities. Most educational ICT use was confined to conventional 'computer literacy'. Even where extensive internet access was available (urban Ghana) there was virtually no formal educational use of this or any other ICT. There is an urgent need to think through ICT in education interventions from the standpoint of educational goals rather than the deployment of specific technologies, and therefore to focus on the coordination of diverse technologies and social networks to source and distribute teaching materials, skills and educational experiences.

- There is a widespread popular belief that ICTs are part of everyone's future (socially, politically, economically). Although this is understood very differently in different places, there is an equally widespread lack of guidance and knowledge within education systems as to how ICTs and ICT skills might be connected to future employment and livelihood strategies. In some sites, this gap was filled by private computer schools which can represent considerable financial investment by poor people.

- Use of ICTs within informal education was more diverse across sites, partially related to levels of civic organization. In South Africa ICTs played a significant role in health, well-being and conflict reduction: Mass mediated television and radio 'edutainment' formats were found to be used extensively, as well as emerging uses of SMS messaging for things such as drug regime compliance for people on anti-retroviral therapy for HIV or TB chemotherapy drugs. In Ghana radio played a central educational role, not matched by any other medium. In the rural site in India radio offered the potential to play such a central role, but is currently limited in its effectiveness by legislation concerning community radio licensing.

(v) Gender Equity

- Symptomatically, gender is one of the most difficult areas for generalization, varying by site, country and specific ICT. There is considerable evidence from the study that ownership and access to technologies such as mobile phones displayed less of the typical gender bias around technologies than one would expect, with the exception of India, although even here there is the possibility of considerable re-negotiation of gender roles in and through new technologies. Where there was extensive internet access, there was a marked gender bias but nonetheless significant levels of internet use by (young) women, with impacts on their autonomy and social connection, in some cases in ways that challenged their position in society and raised a raft of issues to be addressed.

- In certain contexts, mobile phones are already becoming central to women's livelihood strategies and activities: eg, in South Africa, where a significant feminisation of the workforce is occurring; in Ghana, where poorer women are almost universally engaged in trade; and in Jamaica, where women in single parent households depend on social networking for their resources. The importance of mobile phones extends well beyond women's economic and kinship roles to issues of social isolation and autonomy.

(vi) Livelihoods and economy

- In all contexts ICTs represented a major boost to the small enterprise sector, with numerous entrepreneurs seizing the opportunities afforded by deregulation to start public cellular phone services, repair outlets and battery charging facilities. In several sites, a combination of deregulation and support to small enterprise services has facilitated a new range of livelihood possibilities and extended the reach of cellular phones, and to a lesser extent Internet to even remote areas.

Dissemination

Dissemination activities have been building since the end of fieldwork in January 2005. A period of intensive writing has been undertaken that has yielded a number of initial written outputs, particularly in the form of an emerging Working Paper series (see Appendices 8-12). In addition to written outputs the research group has established its own website which can be viewed at www.isrg.info and which contains summaries of the research, profiles of the researchers as well as written outputs. In addition to this site, the working paper series, which provides a rapid pathway for dissemination, is being targeted at other high profile sites such as Eldis, The Communication Initiative and ID21.

In addition to the Working Paper series, work is proceeding on a collaborative book which thematically integrates all four country studies. We are in negotiation with Columbia University Press, which has expressed a keen interest in publishing this book, and a proposal is in preparation (Appendix 13).

A full list of ISBN-referenced working papers, as well as articles and books submitted to referred journals and publishers, is found in Appendix 3.

In addition, each research team will develop a single country study. The Jamaica team has already delivered a book that examines the social impact of mobile phones, to be published by Berg Publishers in 2006 (see Appendix 13). The South Africa team is in discussions with the Human Sciences Research Council of South Africa to publish the South Africa simultaneously as a book and online at the 'free to view' www.hsrc.ac.za website. The India team is in negotiation with Sage India to publish *Connections in Disconnected Spaces: An Ethnographic Exploration* (see Appendix 15). Don Slater has signed a contract with Polity Press to produce a book entitled, *Development, Globalization and New Media*, which will develop themes and research material from this project (see Appendix 16).

In addition to written outputs the research group has been actively involved in disseminating its findings through a number of national and international workshops and seminars, as undertaken in the original project proposal. Appendix 2 details a full list of presentations completed and events yet to occur, such as the ISRG International Workshop to be held on 6 July 2005 at the London School of Economics.

Appendices:

1. Collaborating institutions
2. Dissemination activities
3. Forthcoming and submitted publications
4. Ghana Summary Findings
5. India Summary Findings
6. Jamaica Summary Findings
7. South Africa Summary Findings
8. ISRG Working Paper 1: 'Managing Distance: the Social Dynamics of Rural Telecommunications Access and Use in the Eastern Cape, South Africa'
9. ISRG Working Paper 2: 'Understanding Demand: A Proposal for the Development of ICTs in Jamaica'
10. ISRG Working Paper 3: 'Finding a Voice: The Potential of Creative ICT Literacy and Voice in Community Multimedia Centres in South Asia'
11. ISRG Working Paper 4: 'Embeddedness and escape: Internet and mobile use as poverty reduction strategies in Ghana'
12. ISRG. Working paper 5: 'The Jamaican Internet: Supply, Demand and Education'
13. Submitted book: Horst and Miller, *The Cell Phone*: Summary contents and preface
14. Book Proposal: *A Suddenly Changed World: A Comparative Ethnography of New Media in Ghana, India, Jamaica and South Africa*
15. Book Proposal: India team: *Connections in Disconnected Spaces: An Ethnographic Exploration*
16. Book Proposal (accepted): Don Slater, *Development, Globalization and New Media*

Appendix 1: Collaborating institutions

South Africa

Chronic Poverty Research Centre, University of Western Cape, Cape Town, South Africa
School of Public Health, University of Western Cape, Cape Town, South Africa
Environmental and Geographical Sciences, University of Cape Town, Cape Town South Africa
City of Cape Town Council, Cape Town, South Africa
Lovelife (NGO), Khayelitsha, Cape Town
Social Welfare Department, Mount Frere, Eastern Cape, South Africa

Jamaica

University of the West Indies, Mona Jamaica (Professor Daniel Miller was appointed as a Visiting Professor; Dr. Heather A. Horst was appointed as a Visiting Research Fellow)
Department of Social Sciences, University of the West Indies, Mona Jamaica
Sir Arthur Lewis Institute of Social and Economic Studies (SALISES), University of the West Indies, Mona Jamaica

India

UNESCO, Regional Bureau for Communication and Information, New Delhi
Indian Institute of Mass Communication, New Delhi
Department of Communication, SN School, University of Hyderabad
VOICES, Bangalore.
Uttranchal Jan Jagriti Sansthan, Khadi, Uttaranchal
Himalayan Trust, Dehradun, Uttaranchal.

Ghana

Department of Communications, University of Ghana, Legon
Kofi Annan Centre of Excellence in ICT (aiti-kace), Accra, Ghana
Twifo Praso District Council, Ghana
Legal Resource Centre, Mamobi, Accra, Ghana
BusyInternet, Accra, Ghana

Appendix 2: Dissemination activities

Date	Presenter	Where	Paper
02/09/04	Don Slater	Work, Employment and Society conference	Plenary speech: Spaces of freedom in the 'new economy': views from the south
09/09/04	Thomas Cousins	Mt Ayliff, Eastern Cape, South Africa	Feedback session to local government Social Welfare Department.
13/09/04	Andrew Skuse	Queensland University of Technology, Brisbane	'Telecommunications, social networks and poverty in Mount Frere, Eastern Cape' given at workshop 'The role of media, ICTs and creative industries in development'.
13/09/04	Jo Tacchi	Queensland University of Technology	Workshop 'The role of media, ICTs and creative industries in development'. (Contributions by Jo Tacchi, Andrew Skuse, Ian Pringle (UNESCO) John Hartley (QUT)
14/09/04	Thomas Cousins	IHDP: Richards Bay, South Africa	'Poverty, Climate Change Adaptation and Communication: the dynamics of rural poverty in Mt Frere, South Africa.'
19/10/04	Andrew Skuse	University of Adelaide	'Claiming community in Nkanini, Cape Flats: information, informal settlement and the poor' Anthropology Departmental Seminar.
03/12/04	Don Slater	International Social Science Seminar, Faculty of Social Sciences, Stockholm University.	Glimpsing the future in the Net: ICTs as material culture
09/12/04	Daniel Miller Heather Horst	University of the West Indies, Mona (Jamaica)	Poverty and Communications Workshop (28 attendees including representatives of all the relevant government ministries and planning offices, all the telecommunication companies, relevant university departments. Professor Miller was also on Page 2 of the national newspaper, Jamaica Gleaner)
23/12/04	Jo Tacchi and Tripta Chandola	Seminar, Centre for Media Studies, Delhi, India	Ethnography and ICT research
26/01/05	Don Slater Janet Kwami	ICT4Gov Conference (WSIS Africa pre-meeting), Accra, Ghana	ICTs, Poverty and Development: An ethnography of two villages in Twifo Praso
23/02/05	Don Slater Janet Kwami	Social and Political Sciences Media Seminar, Cambridge University	Embeddedness and escape: internet and mobile use as poverty reduction strategies in Ghana
16/03/05	Daniel Miller	Goldsmiths College London (UK)	Evaluating Mobile Phones in Jamaica
08/02/05	Daniel Miller	University College London (UK) Public Lecture	Link-up: Poverty and Mobile Phones in Jamaica
21/04/05	Don Slater	University of Denmark, Copenhagen. MODINET seminar, keynote	Glimpsing the future in the Net: ICTs as material culture
29/04/05	Heather Horst	Southwest Anthropology Association Meetings, San Jose, CA USA	The Cell Phone: Linking up in Jamaica
19/05/05	Don Slater Janet Kwami	Busy Internet, Accra	Information Society Workshop. Feedback of research findings to representatives of government, NGOs, private sector and academics. 40 attendees.
30/05/05	Thomas Cousins	Tabankulu, Eastern Cape	Feedback of research findings to local councillors at Tabankulu Municipality Offices
31/05/05	Thomas Cousins	Mount Ayliff, Eastern Cape	Feedback of research findings to local councillors at Mount Frere Municipality Office

06/07/05	Daniel Miller, Don Slater, Jo Tacchi, Thomas Cousins	London School of Economics	Information Society Research Group Seminar: presentation of findings to academics and policy-makers
13/07/05	Jo Tacchi	The Radio Conference 2005, Melbourne, Australia	Keynote speaker: 'Radio and new media technologies: Making technological change socially effective and culturally empowering'
09/06	Daniel Miller	Thammasat University, Bangkok	Seminar
10/06	Daniel Miller	Research Centre for Social Theory Peking University, Beijing	Seminar
27/10/06	Don Slater	Information Systems Forum, Darwin College, Cambridge	Lecture
12/12/05	Tripta Chandola and Jo Tacchi	Taramati Baradari Culture Complex, Hyderabad, India	Second International Conference on Technology, Knowledge and Society – paper 'The Politics of Information: Access, Excess and Articulation'
12/12/05	Jo Tacchi	Taramati Baradari Culture Complex, Hyderabad, India	Second International Conference on Technology, Knowledge and Society – paper 'Ethnographic Action Research and ICTs for Development: Considering the Communicative Ecology'
5/12/05	Jo Tacchi	United Theological College, Bangalore, India	OurMedia V conference – panel organiser and presenter 'participatory multimedia initiatives and poverty'

Jo Tacchi and Andrew Skuse have successfully gained Australian Research Council funding of AUS$560,000 and UNESCO, UNDP and Foundation for Development Cooperation contribution of AUD$240,000 to employ findings from the current research and build on an earlier project of Jo Tacchi and Don Slater in South Asia.

'Finding a Voice: Making Technological Change Socially Effective and Culturally Empowering' is a three year project that aims to:

1. Investigate the most effective ways of articulating information and communication networks (both social and technological) to empower poor people to communicate their 'voices' within marginalised communities across Asia and the Pacific region.
2. Research opportunities and constraints for local content creation (i.e. content created by and for specific local community networks) for the development and communication of ideas, information and perspectives appropriate to those communities.
3. Research how new information and communication technologies (ICTs) can be integrated with traditional media and existing communicative ecologies in these marginalised communities.
4. Implement a rigorous participatory research methodology across these networks which includes ongoing and embedded evaluation of the impact and sustainability of local ICT initiatives.

Research has shown that ICTs can contribute to development, but need to be introduced in ways that recognise local social networks and cultural contexts. This project takes a participatory approach to research, aiming to empower people through finding their own voice. We will establish a research network of local ICT initiatives across Asia and the Pacific region. Using ethnographic action research the network will be populated by local researchers in each of these initiatives, trained and supported by Australian researchers. Implementation of this project will begin later this year.

Appendix 3: List of Publications (forthcoming and submitted)

Horst, H. and D. Miller (Forthcoming). *The Cell Phone: An Anthropology of Communication*. Oxford and NY: Berg Press

Horst, H. and D. Miller (Forthcoming) 'From Kinship to Link-up: Cell Phones and Social Networking in Jamaica', *Current Anthropology* December 2005

Horst, H. (with Anastasia N. Panagakos) (N.D.) 'Return to Cyberia: An Introduction to Technology and the Social Worlds of Transnational Migrants', *Global Networks* March 2006 (Submitted)

Miller, Daniel and D. Slater. (2005) 'Comparative ethnography of new media', in James Curran and M. Gurevitch (Eds). *Mass Media and Society*. Fourth Edition. London: Hodder Arnold. Pp 303-319

Miller, D. and H. Heather (2005) *Understanding Demand: A Proposal for the Development of ICTs in Jamaica*. The Jamaican National ICT Strategy and Plan Discussion Document.

Miller, D. and H. Heather (2005) 'Understanding Demand: A Proposal for the Development of ICTs in Jamaica', Information Society Research Group Working Paper 2, University of Adelaide.

Miller, D. and H. Heather (N.D.) '"Cell Phone Come Like a Blessing": Religion and the Cell Phone in Rural Jamaica', *Jamaica Journal* (Submitted March 2005)

Skuse, A. and T. Cousins (N.D.) 'Managing distance: poverty and rural telecommunications access and use in the Eastern Cape, South Africa'. Submitted to *Journal of Asian and African Studies*.

Skuse, A. and T. Cousins (N.D.) 'Getting Connected: the Social Dynamics of Urban Telecommunications Use in Khayelitsha, Cape Town'. Submitted to *New Media and Society*.

Skuse, A. and T. Cousins (2005) 'Managing distance: poverty and rural telecommunications access and use in the Eastern Cape, South Africa'. Information Society Research Group Working Paper 1, University of Adelaide.

Cousins, T., A. Skuse and S. Parnell (2005) 'Migrants in the City of Cape Town: A report for the City of Cape Town'. South Africa Migration Project, Houghton, Johannesburg, South Africa.

Du Toit, A,. A. Skuse and T. Cousins, T. (N.D.) The Political Economy of Social Capital: Chronic Poverty, Remoteness and Gender in the Rural Eastern Cape. Chronic Poverty Research Centre Working Paper, University of Western Cape, Cape Town, South Africa.

Skuse, A. and F. Power (2005) 'AIDS Communication'. UK Department for International Development, London.

Skuse, A. and T. Cousins (N.D.) 'Spaces of resistance: poverty, information and community organisation in urban settlements'. Submitted to *Mobilities* Journal.

Slater, D. and J. Kwami (2005) 'Embeddedness and escape: Internet and mobile use as poverty reduction strategies in Ghana'. Information Society Research Group Working Paper 4, University of Adelaide.

Slater, D. and J. Kwami (N.D.) 'Embeddedness and escape: Internet and mobile use as poverty reduction strategies in Ghana'. Submitted to *Sociology*.

Appendix 4: Ghana Summary Findings

Information Society: Emergent Technologies and Development Communities in the South

Ghana – Summary findings

Information Society Research Group (ISRG)

ISRG is a UK Department for International Development (DFID) funded university consortium that comprises University College London, Queensland University of Technology, The London School of Economics and The University of Adelaide. The research group draws together institutions and researchers with an interest in producing qualitative insights into the digital divide and processes of communications for development.

ISRG Summary Findings

Key sheets are a short format for the disseminated of main findings. These are available through ISRG's own website www.isrg.info and through sites such as Eldis, ID21, The Communications Initiative and DFID's i-connect online.

Locations

Urban site: Mamobi is a slum in northern Accra that has grown up around two market areas over the post-war period, largely through in-migration of northern Ghanaians and immigrants from neighbouring countries, mainly Muslim (Mamobi is around 60-70% Muslim). It is therefore described as a 'zongo', with connotations of dirt, poverty and lawlessness. Habitations are largely compound houses in east Mamobi, and, in western Mamobi, market storage structures converted into houses. Infrastructure is extremely poor with overused public toilets and water shortages often lasting many months. Almost all women are market traders; male unemployment is extremely high, especially amongst youth, with those employed finding work as security guards or in small and informal business. Sanitation is also poor because of regular flooding of local 'gutters', with a high and economically debilitating incidence of malaria.

Ethnography focused on in-depth interviews with 50 households, and closer involvement with several households. Because of the high level of Internet and mobile phone usage, much of the work also focused on Internet cafes and numerous types of small telecoms kiosks and businesses.

Rural site: Research focused on two villages at varying distances from a district capital, Twifo Praso, 70kms north of Cape Coast. This is an Ashanti area, but supplemented by largely Ewe migrants who took advantage of vacant arable land over last 20 years. It large comprises smallholdings of cocoa or oil palm land, mixed with vegetable crops, typical of Ghanaian agriculture. Livelihood is at a subsistence level, with seasonal inflows of cash at harvest times, oscillating with periods of high debt and lack of cash; daily life is sustained through household vegetable production supplemented by weekly marketing of small surpluses. Infrastructure is poor but improving: the villages were not electrified, though this is imminent; roads have improved in recent years, though the abatement of rail services seven years ago lead to the near collapse of one of the villages; schools are in a parlous state in terms of infrastructure, materials and personnel; health provision is minimal. Rural depopulation through migration of youth to the cities is a major concern. More optimistically, the pro-active district assembly at Twifo Praso has introduced a range of quite successful agriculture initiatives, as well as a high standard ICT facility.

Ethnography was divided between the two villages plus comparative research in Twifo Praso and one electrified village on the main road to Cape Coast. Research again comprised about 50 long household interviews, supplemented by involvement with local schools, district assembly, the ICT centre and community groups.

Key development opportunities and constraints relating to ICTs and communication

The two sites clearly reflected a division into two Ghanas, one urban and one rural, with divergent communications structures, problems and opportunities.

Mamobi is media-rich, despite its poverty, with high levels of mobile phone use; a relatively large number of Internet cafes; video and photography businesses; widespread domestic and public consumption of videos and VCDs; as well as ubiquitous TV and, above all, radio. None of these, however, with the partial exception of radio, connect to development processes in direct or expected ways. This is partly because all are emerging within a strictly commercial and entrepreneurial framework of very small businesses with no interest in development or connection to government ICT policies, which operate on quite different assumptions. For example, whereas government and NGO policy regards Internet as a tool of development through information distribution, the large numbers of Internet users in Mamobi regard the Internet entirely as a communications tool, focused predominantly on chat with foreigners; there was exceptionally low awareness of even the existence of websites. Mobile phones, on the other hand, are framed by users as a means of social connection, coordination and practical information exchange, and therefore have much development potential, for example through the use of SMS information services, currently being piloted in some rural areas. Similarly, the hugely popular consumption of film on video and VCD offers an already existing infrastructure for widened development communication. Radio is already a success story in this regard, having constituted both an enactment and symbol of pluralist democracy, as well as a practical information and news source and local language communications service, since the full return of democracy in 2000.

Telecoms, and to a much lesser extent Internet, has also provided considerable employment and entrepreneurial opportunity in the area, largely in the form of communications centres and mobile phone kiosks offering a variety of services. There is a prodigious understanding of the economics and technicalities of telecoms which allows residents to take advantages of new market opportunities in this emerging sector.

By contrast, the Praso villages have no electricity, no mobile or landline phone coverage, and virtually no print media. Each village does have a generator-driven video cinema, some television and the ubiquitous and very popular radio. On the whole, the main structures of communication involve physical mobility along the roads, most significantly along the networks linking markets in neighbouring localities and the district capital. Whereas Mamobi residents associated ICTs with establishing connections with family, friends or strangers living outside of Ghana, Praso villagers saw them in terms of internal Ghanaian relationships. They associated ICTs firstly with an ever-widening gap between rural and urban progress, and as an additional developmental benefit to urban Ghana which would increase their disadvantage; secondly, with the need to maintain and utilize connections with extended family in the urban areas; and thirdly with the need to coordinate movements to and from urban markets. Significantly, the Praso ICT centre was largely used by secondary school students boarding in the district capital, as well as by local governmental officers, and therefore by those who were already at one step remove from the village; village people at best got a taste of the new media.

The key issue for Praso is to create connections between new media and the predominant communication by road and face to face interaction. This includes building on existing mobile outreach work by, for example, agricultural extension workers, health NGOs and clinics and to a lesser extent teachers. This could take the form of both more mobile ICTs

(especially hand held devices, distribution of ICT produced print and poster materials, and mobile multi-media) and better connection between information mediators and sources of information in the urban areas (eg, regular Internet access for teachers and agricultural extension officers).

Despite the contrasts between Mamobi and the Praso villages, both are characterised by high levels of face to face interaction often supported by local community groups such as youth groups, church and mosque groups, informal labour organizations and informal women's networks. Youth groups in particular have made very effective use of drama, music and role playing, particularly in HIV/AIDS awareness campaigns. The biggest ICT opportunities are in supplementing these activities through information and multi-media provision and through building on these existing groups as locally established and respected mediators of information.

Finally, a central issue for cultivating the development opportunities of ICTs concerns lack of guidance in how to understand and 'frame' these media. While Internet and mobile phone entrepreneurs have little interest in developing more expansive potentials of these media, the government and NGOs are focused either on simply the provision of infrastructure and hardware, without attention to the institutional and practical contexts of use; or they are focused on the cultivation of imported models of new media use (computer literacy, software development) that do not connect clearly to the way that the large numbers of current users understand these media.

We would particularly like to see government and business act in partnership with the Internet café operators and with telecoms providers and small telecoms businesses to offer specific services and information that could help develop more expansive and creative uses of ICTs.

New networks and management of remoteness

Possibly the most significant impacts of ICTs are on the management of extended family networks and business contacts, both within Ghana and across the Ghanaian diaspora. To be clear, this already constitutes *de facto* the primary framing and practical use of mobile phones and Internet, despite the largely information-oriented understanding of ICTs by government and NGOs. The context for this is, firstly, the extraordinary importance of managing complex extended kinship networks and obligations across extensive and long-term migration within Ghana (both rural-urban and rural-rural migration); and secondly the extraordinary practical and symbolic importance of external migration, particularly (over the last 20 years) to the Northern hemisphere, but also including significant migration with West Africa.

1. Mobile phones are already having a significant impact on mediating and managing the social costs and benefits of kinship networks – coordinating movements, maintaining contact and performing familial responsibilities. This is often best represented by the management of family funerals, involving complex movements, planning, financial negotiations, etc. Continued expansion of mobile communication will continue to enhance this, and will continue to be a primary site for negotiating the transformation of kinship.
2. The use of mobiles in business coordination is already well understood and developed, and could be further encouraged by adjusting rate structures and offering services and communications ideas that are specifically targeted at the small and informal business person and small trader. Business-oriented Internet use – in particular email – is almost non-existent below the more privileged classes, but there is already scope to offer help in using Internet for sourcing and for business communication.
3. Internet use in Mamobi, where it is extensive, was predominantly focused on random chat with foreigners, largely in the North, with a view to accumulate actual or symbolic goods. This usage could be developed by offering the facilities for more

structured and complex communications with foreigners (particularly for schools and youth); and could be expanded into wider use of the Internet for information.

4. In line with current development thinking, there is good reason to rethink migration, regarding it not as a once for all movement but as a flow of people and goods that is constant and reversible. ICTs really have a scope (already to some extent realized) to make migration a more flexible process by providing cheap, direct and regular communications across dispersed networks; by providing access to cheaper sourcing of means for travel and transportation of goods; by providing information and facilities for cheaper, quicker and more trustworthy flows of remittances (in money and goods); and by allowing people to feel – whether they are in Ghana or abroad – that they need not sacrifice or lose contact with their social networks and resources when they physically move in either direction.
5. Point 4, above, applies to both international and internal Ghanaian migration. It is clear from our Praso site that ICTs could have an impact on attracting and retaining particularly skilled people in rural locations, hence helping to stem the increasing disadvantaging of rural Ghana. The presence of ICTs allows teachers, health workers and government officers to feel that they are not cut off from social networks or resources for professional development. This applies, too, to aspiring young people as well as to local traders.

Health and welfare

1. Many of the central ICT-relevant health issues in both sites were infrastructural, concerning administrative issues of keeping records, coordinating between clinics and hospitals and avoiding wastage of drugs and other material through lack of available and updated inventories. This also implicates speed of response, particularly in the rural area.
2. Ghanaian health provision relies heavily (both officially and unofficially) on diverse informal, voluntary and support staff, from village herbalists to district nurses and midwives. Improved information access either through direct use of ICTs or material distributed through interconnected new media (from Internet to radio or photocopied posters) is vital, as well as direct support through improved communications links. This also applies to managing the current disconnect between conventional medicine on the one hand and alternative medicine, whether in the form of traditional herbalists or less honest sellers of miracle cures.
3. As noted, both sites had youth groups using drama, music and role playing very effectively in HIV/AIDS awareness. ICT access could both develop their expertise and supplement their activities through multi-media material and information resources. Most importantly, it could help widen their activities from the well-funded HIV/AIDS focus to the currently more debilitating issues of malaria and sanitation.
4. In Ghana it is proverbial that families will spend fortunes on a funeral, having spent nothing on the medical treatment that could have kept the deceased alive. Although the reasons for this situation are extremely complex, it seems clear that medical institutions are widely regarded as untrustworthy, ineffective, expensive and remote. A range of ICTs could be deployed (including some of the previous three points) to establish closer and more direct connections between health institutions and communities, with more information intermediaries playing a role in building trust and transmitting concerns and issues in both directions.
5. In both sites, illness takes the form either of periodic debility through malaria or undiagnosed diseases or of ‘catastrophes’. The latter take the form of major illnesses requiring hospitalization and long-term treatment (stroke, cancer, heart disease, diabetes) which cost several times a household’s annual income and which often require liquidating resources accumulated over many years and representing the loss of income streams for many years to come. Although a health insurance scheme is now being introduced, there is still an enormous job of public education to be done in changing attitudes to planning health provision as part of household livelihood strategies.

Civil Society strengthening and rights

1. Many Ghanaian policies deploy a rhetoric of decentralization and local self-definition. For example, the current programme for Community Information Centres in all district capitals will provide hardware and (HPIC funded) buildings, but no guidance at all on the institutional and interpretative structures which might frame ICT use. The same approach is employed in implementing the new health insurance scheme here.
   At the same time, local organization has shallower and more recent roots here than in many other regions (for example, South Africa and India), partly because local civil society has largely comprised the traditional chieftaincy structures plus local government.
   We have stressed elsewhere that there are nonetheless local groupings including traditional labour organizations, kinship networks, religious groups, traditional health practitioners, and more recent self-help and cooperative groups. These can be enlisted as information mediators and communication nodes, enhanced by more mobile communications and ICT-connected information sources.
2. Radio has been an active and symbolic medium for democracy, information and localized communication, above all in local languages. Yet there is currently a disconnect between ICT policy on the one hand (largely meaning computers and Internet) and on the other hand a wealth of both community and commercial radio experience.
3. Much government ICT policy in e-governance is based on information provision through websites despite the fact that the wealth of Ghanaian Internet users do not ever visit websites. There needs to be both public initiatives to expand ICT understandings and uses and creative thinking about how to connect e-governance to people's actual uses of ICTs (eg, mobile phones, radio, Internet chat and email lists).

Education

1. In both sites there is some fear of new media amongst educational professionals and parents that is preventing effective use, unfortunately in conditions where ICTs might offer the only feasible access to good quality educational material and experiences.
2. ICT education is too often equated with teaching computer literacy and word-processing rather than as a source of educational material and experiences. Moreover, there is often a stress on hands-on use of computers, whereas – especially in the rural areas, which almost entirely lack printed matter – it is probably more important to source material online which is then distributed by locally appropriate means: photocopied information sheets, radio or audio cassette, mobile multi-media devices, or the teachers' voice.
3. Ghana has a laudable policy of 'teaching the teachers', but this needs to be expanded in terms of point 2, above, opening the teachers to more creative framings of ICTs in education.
4. As noted elsewhere, and in particular in relation to young women, students need guidance in the potential uses of ICTs. This is dramatically the case in Mamobi where there are huge numbers of active young Internet users who have never visited a website, let alone used the Internet as a resource for their schoolwork.
5. Given the huge interest in migration and in connecting to the North, ICTs could play a significant role in structuring and developing North-South relations and understandings in more complex ways. This has already been very fruitfully piloted in several school linkage programmes, one of which was in Mamobi (British Council). The ability to develop richer conversations with Northerners and more varied information sources on life abroad could significantly mediate issues around migration, long-term livelihood strategies and relationships to kin living abroad.

Gender equity

1. Men and women in Ghanaian households keep largely separate budgets, with specific internal transfers for food and housekeeping. Women are almost universally small traders, managing joint and overlapping commercial and household inventory and cashflow. Their management would be significantly helped by enhanced business information, training and support facilities (such as banking and access to microfinance). So too would the men's efforts. At the same time, self-help groups and micro-finance collectives – which have played a strong role in these areas in South Asia and now in East Africa – are recent and less well developed in Ghana (and almost non-existent in urban Ghana). This would also reduce reliance on kinship networks. Such groups, where they exist, are already acting as information mediators to the community, and increased ICT support could enhance this development.
2. There are significant generational differences that probably impact more on women than men. Women's literacy and educational level has increased dramatically between today's youth and their parents'. This is less dramatic in the rural areas, but still highly significant, with a solid change in the valuation of girls' education if not in the ability to realize it. ICT support for schoolwork (materials, projects, linkages to schools in urban Ghana and abroad) plus enhanced awareness of new employment possibilities would have an enormous capacity to support and capitalise on these changes.
3. ICT impacts on many areas that have been discussed under other headings would also disproportionately benefit women, particularly through their larger role in managing family health, daily finances and provision, extended family relationships and community communications functions.

Livelihoods and economy

1. ICTs have a straightforward impact in lessening the cost and inconvenience of managing extended social and kinship networks both within and without Ghana, and this cannot be overestimated. This is exceptionally important given the state of transportation infrastructure in the country. It is simply getting easier and cheaper to 'do' family and to 'do' business.
2. ICTs are already having an impact (much greater in Mamobi, but beginning in Twifo) on how people imagine and embark upon longer-term life and livelihood strategies, how they envision their, and their children's, futures. The mobile phone sector is exemplary in this respect, with local people accruing sophisticated knowledges of pricing structures and technological possibilities, and forming small businesses around them. Similarly, young people are able to imagine futures in new ICT sectors, albeit with tremendous frustration as to their ability to realize these imaginations.
   These new imaginations need to be addressed directly, through business education, employment guidance, cheap sources for capital and credit, and business infrastructure support. Although the 'incubator' idea is evident in Accra, it is obviously aimed at an elite. Local business support facilities could help capitalise on the considerable energies currently being released in poorer communities in relation to ICTs.
3. In terms of non-ICT livelihoods, as stressed above, under gender, ICT-enhanced business training and support for women would be particularly beneficial, given their near universal involvement in trading. Similarly, ICT support for businesses conducted across migrating families could have an impact. Poor families in Mamobi are often involved in ad hoc import/export with the north, which is hampered by uneven access to cheap communications, and less than transparent information about taxes, regulations, transport, and so on.
4. Government stress in ICT policy is on establishing ICT infrastructures for taxation, business regulation, law, etc, and this is quite right. Ghanaian economic activity,

however impoverished, is complex, global and often ‘modern’, hence requiring a modernized ICT infrastructure.

5. There is a particular urgency to modernizing banking and finance sector technology (including online and electronic payments), especially given the debilitating shortage and cost of capital and credit, and the high cost and inconvenience of remittance.

Appendix 5: India Summary Findings

Information Society: Emergent Technologies and Development Communities in the South

India – Summary findings

Information Society Research Group (ISRG)

ISRG is a UK Department for International Development (DFID) funded university consortium that comprises University College London, Queensland University of Technology, The London School of Economics and The University of Adelaide. The research group draws together institutions and researchers with an interest in producing qualitative insights into the digital divide and processes of communications for development.

ISRG Summary Findings

Key sheets are a short format for the disseminated of main findings. These are available through ISRG's own website www.isrg.info and through sites such as Eldis, ID21, The Communications Initiative and DFID's i-connect online.

Research contexts

India has a population of 1,028,610,328. It is made up of 28 states and 7 union territories. The percentage of the population living on less than $1 a day according to 1999-2000 data is 34.7, although a 2002 estimate is 25%. Just over 72% of the population of India live in rural areas[1]. Poverty (as defined officially as those living below the poverty line) is most prevalent in rural areas, and in urban slums. Our urban site is in Delhi, our rural site in the newly formed state of Uttaranchal (previously part of Uttar Pradesh). In India's urban areas poverty can be associated with high density and inadequate housing, poor sanitation, the presence and spread of infectious diseases and the fear of eviction for slum dwellers. In rural areas the association is with lack of infrastructure such as roads, power, telecoms, good quality education and health services, limited employment opportunities and distance from urban and semi urban markets and centres which lead in turn to isolation.

Ethnographic fieldwork has been conducted between both sites over 12 months. Research relationships were developed with households and groups of households in each site. Formal and informal in-depth interviews were conducted during field work and 7 families in the urban site and 5 in the rural site were researched in more depth. Researchers attended weddings and followed a family through the death of the head of the household. Through local NGOs we gained access to self help groups and workshops. We observed and initiated group discussions. In addition, a standard set of questions and topics were administered to 65 households in the urban site, and 42 in the rural site. This provides some basic descriptive data that has been collected across all four country sites.

The urban site *Kache Ghar*[2] is a high density cluster of three slums (A, B and C), all now long established with families having lived in slum A since it first came up in 1975. Officially *Kache Ghar* has a total population of 37,665 though this figure was collected though a survey in 1994 and the current population is certainly greater. Two of the three camps now largely consist of *pukka* (concrete) houses as over the years the *Jhopdi* (huts) have been replaced, still *Jhopdi* provide shelter to many.

[1] 2001 census (provisional)
[2] Local place names have been altered for anonymity.

The rural site is a multi caste village *Uncha Gaon* consisting of 35 houses, 17 of them *pukka*, 18 of them the traditional wooden and mud two storey houses, and 3 huts made of wood and mud built and inhabited by migrant Nepalese farmers. Research encompassed the neighbouring small town of *Naya Sahar* focusing especially on its market, its links and importance to the village of *Uncha Gaon*.

Key development opportunities brought about by ICTs and communication

The lack of flow of information and communication is a key constraint to opportunities, exacerbated by low income and by social and cultural manifestations of gender and caste. Vulnerability is caused by poverty generally, restricted mobility (social and spatial), restricted employment opportunities, the threat of ill health plus the uncertain future of slum dwellers due to their illegal status. While the urban site is essentially a space of in-migration from other states in India, the rural site suffers from out-migration to urban areas – in both cases the migration is driven by the search for employment and better livelihoods and both are accompanied by familial separations. The lack of employment opportunities in the rural site results in families being separated for long periods whilst (mostly) men seek paid employment in urban centres, often far away and for long stretches of time. Communication with those who are away and those left behind is a major concern for people in both sites. Telephones play an important role in maintaining contact for many, although the lack of telephone ownership means this is less utilised than it could be with public call offices playing an important role.

The most important existing ICT penetration in the urban site is in the form of radio, cable TV and 'STD booths'[3]. STD booth and local cable operators might be considered as the best enterprising use of ICT opportunities here. In the rural site radio is the most pervasive mass medium, with local TV cable operators in the nearby town starting to penetrate the villages, and STD booths available in the town.

There are few fixed line telephone connections in the urban site, all explained as present for business purposes. In the rural site there were 4 fixed line connections, said to have been taken up in order to keep in touch with relatives. Mobile phones in the urban site are not yet commonplace but growing as prices fall. Mobile ownership in this context was generally explained as useful for business purposes. Mobile network coverage is poor in the rural site, only becoming available in the past one year, but set to improve. One family in the village has a mobile phone, but it was not in use during fieldwork. We can expect to see an increase in mobile ownership in the future. In October 2004 the number of mobile phone subscribers in India grew by 1.4 million to 44.9 million, for the first time mobile users outnumbered the 43.9 million registered land line users. Fixed line and mobile tariffs have steadily decreased throughout the past year with mobile phone users growing by 55% to total 52.17 million. While the cost has been prohibitive in the past for low income people, and while it has been hard for slum dwellers to get a phone because of the paperwork required (and their illegal status), the recent proliferation of pre paid packages for mobiles is making it easier and more affordable.

New networks and the management of remoteness

The STD booths provide access to telephones for local people in both sites where fixed line and mobile phone ownership is very low, the cable TV connections in the urban site provide access to multiple TV channels, some free to view, some pay channels. In this way local enterprises provide important access to telephones and entertainment. Neither currently offers information services that would meet the information needs of the two sites, but both present opportunities for more effective use of these ICTs in development.

Radio is ubiquitous in each site, though ownership does not necessarily reflect this. The urban site has access to several public and commercial radio stations. The only terrestrial

[3] The vernacular term for public call offices (PCOs) offering local calls and standard trunk dialling (STD), generally with facilities for international direct dialling (IDD)

radio station accessible in the village is a public (All India Radio) station. Since 2000 a local community radio group *Hevalvani Community Radio* has been operating intermittently in the rural area, 'narrowcasting' locally made educational and awareness raising radio programmes. The group visits villages and plays the programmes through cassette machines to groups of villagers. Community radio licenses are not yet legislated for in India, though progress is being made with the introduction of 'community radio' licenses to educational establishments. Since fieldwork was undertaken *Hevalvani Community Radio* has been experimenting with broadcasting some programmes on WorldSpace via satellite.

While the areas surrounding the slum cluster have numerous internet cafes these are rarely if ever accessed by slum dwellers. Internet café owners did not recount any instances of slum dwellers using their facilities, nor did they acknowledge any need. There is one location within the slum that has internet access – a school for alternative education and while access to computers in this school is excellent, with two well equipped computer labs and an additional computer in each of the 24 classrooms, the use and understanding of the internet is highly restricted. Pupils come from slum C which has the most developed infrastructure and from surrounding areas outside of the slums. The three slums, though apparently blending one into the other nevertheless maintain distinctions and boundaries, across which communications do not flow. Respondents in slums A and B were unaware of the school and computer labs in slum C.

There is no internet access in the village or the town, the village school does not have computers. Secondary schools in the vicinity do have computers – but no internet connections. Computers there have been introduced as part of the school curriculum, though there were no trained teachers. One shop owner in the town had purchased a computer and planned to offer computer access but had not found any demand for this service.

Improved communication and information flows in both sites might be achieved by the establishment of public service or community programmes or channels, and combining media – internet, radio and cable TV - would increase access to information. Local participation in such initiatives would improve media literacy and help to achieve a good mix of appropriate local information and entertainment and internet sourced educational and health information. STD booths also provide a good opportunity for public access information points.

Health and Welfare

The health and welfare in both sites is poor – while the infrastructure available appears on paper to provide adequate services, the experience is far less than adequate. Access, followed by effective use of health services is rare for a range of reasons. Levels of awareness about health and disease are very low in both sites and could be greatly improved through effective use of ICTS. Ill health poses a serious threat to families in both sites.

While health services are present in the urban site in the form of government run Health Clinics close to the slum cluster, staff attitudes to slum dwellers and lack of outreach help to limit effective use of services. In the rural site only one government run Health Clinic is available in a town 20 miles from the research village. It serves 144 villages. There is only one qualified doctor operating from this Clinic as it is hard to attract qualified practitioners to this location. Outreach services are available through an elaborate network of Health Volunteers working through Primary Health Centres set up for every (on an average) three villages. However, these Health Centres primarily cater to child health and vaccination programmes. Health Volunteers are supposed to visit each village in their area every month to provide basic health services and information but research found these visits to be irregular.

Many people, in both sites, access health services and treatments through privately operating doctors for a fee. These doctors were considered by respondents to be more accessible and often thought to provide better medications. At the same time they were considered expensive and there was uncertainty about the quality of care provided. Public hospitals are often the first contact patients have with government appointed and more highly qualified medical practitioners once their condition has worsened and there is no way of avoiding medical intervention.

Health information is highly inadequate with many people unaware of the causes, names or treatments of their symptoms as exemplified in the urban research when a widow did not know what illness had recently caused the premature death of her husband. In the urban site many women talked about feeling unwell in terms that we might understand as depression, though not acknowledged as such by health professionals. In the rural site many women complained of a chronic vaginal infection common in the area but did not understand how it was transmitted or effectively treated.

There is very strong social and cultural stigma around certain diseases. This includes one of the most common diseases - TB. Even more stigmatised are sexually transmitted diseases which are not acknowledged as present or a serious threat by health workers, doctors or local people.

Other common health problems are anaemia, poor nutrition and alcoholism. Water and sanitation in both sites is a serious threat to good health, especially so in the urban site where public conveniences are health hazards in themselves and water is often scarce.

Civil Society strengthening and rights

A major issue in both sites is the circulation of information and formation and mobilization of effective and representative bodies. There are structures in place in both sites that might facilitate this, but a lack of awareness amongst residents about how they might best utilize them or a feeling of powerlessness. Self help groups are prominent in the rural site where groups of women can gain some control over finances, as are NGOs that serve a range of agendas – the most effective in the vicinity of the village serves a broad agenda of awareness raising. Such NGO activities in the urban site were less visible or permanent (except for the school in Slum C). Civil society activities are hampered in the urban site and aided in the rural site by local governance structures. In both cases improved circulation of information and better coordination of activities could be greatly aided by utilizing ICTs, especially radio in the rural site and internet and cable TV in the urban site.

In the urban site: Slums are often referred to as `vote banks' for political parties with local governance working through local Associations which link to political parties. Each slum has an Association to represent the rights of residents. Although these Associations have a mandate and an `elected' head, elections had not taken place in the past 10 years. The head of Slum A has been in the position for the last 15 years, despite having been found to be siphoning money from residents that was intended to pay for their electricity supplies (which as a consequence were disconnected). In the popular narratives she is represented as being corrupt and totally controlled by the political party she is affiliated to. The head of Slum B has been in office for 10 years and sees no need for elections. Slum C's Association is the only one of the three which is registered as a Society and therefore has a working body of president, vice president and treasurer. The Society has recently set up a cell for the residents to resolve local disputes and other concerns, with a major aim of avoiding having to deal with the police. One of the most dramatic impacts of lack of voice and representation attributed to their `illegal' status is evident in the interactions with the police. The police employ threatening tactics to control slum dwellers.

In the rural site: Until the introduction of the `Three Tier Administration' in 1998 through the 76th parliamentary amendment the participation of the lower castes in political matters at local levels was very limited. The three tier administration has put in a system of close

checks and balances to be exercised at the three local governance levels of 1) the Village 2) the block and 3) the district. Under this scheme certain seats at all the three levels are reserved for women and members from lower caste communities. This system has considerably reduced corruption and appropriation of power. There are monthly meetings at the village level and half yearly meetings at the block and district levels to discuss the budget, its allocation and adequate appropriation. One of our key respondents in the village, belonging to the lower caste, is the local representative at the Block level and though he does not have administrative powers he still manages to exert pressure by giving the members of his community a voice at these levels. It is because of the pressures he exerted that lower caste communities were assured electricity connections during the last field visit[4]. He is the first member of the lower caste from the village to have been elected to a representative position.

Education

There is a lack of valuation of education, linked to perceived low standards and the futility of getting an education when there are limited employment opportunities. Drop out rates are high and gendered with more girls leaving school earlier. Families often promote the education of one child over others if they are considered academic. In these cases education is seen as a possible way for the family to improve its circumstances through the child who might gain a good job in the future. For girls a good education must be weighed against the likelihood of finding a good marriage partner.

Government schools are reasonably well resourced and all secondary schools have computers. However, the ways in which the computers are used is basic and children are given very little time on the computers. Internet is not used. Online resources would provide teachers and pupils with a range of beneficial resources to improve the quality of education offered and received.

In the rural site colleges for further and higher education are at some distance from the village incurring transportation costs and taking time that for girls might be used to complete domestic chores. Most girls who pursue higher education do so through correspondence courses. In both cases the degree obtained is considered to be of low quality and of little use locally where jobs are scarce.

Vocational training for adults is scarce and could be improved through the use of ICTs. In the urban site the alternative school has very good computer facilities with internet connections but the use of the internet is severely limited and monitored. Pupils are not allowed to surf, email or chat. In the rural site educational programmes on a range of issues like local governance, handicrafts and agriculture are distributed through the community radio project. The radio project could be utilised more effectively by a range of NGOs if broadcast terrestrially.

Gender Equity

Access to ICTs in both sites is clearly gendered. This reflects the general lack of autonomy and mobility (spatial and social) of women who also have limited employment/economic opportunities and heavy domestic workloads. In the urban site women are largely confined to their close neighbourhoods, with some women never venturing further than a few streets and never having entered the neighbouring Slums. In the rural site it is the women who farm the land, collect fodder for cattle and water for the household. They also carry goods to and from town, though they rarely travel further a field, and certainly not unaccompanied. Men do not carry loads in this area (apart from Nepalese men) but socialise widely and move around in the area and further a field freely.

[4] The poles were erected by the time the field work was finished and the connections were assured within the next 15 days. Prior to this all electricity connections in the village were taken up by higher caste residents, despite the fact that the Government had subsidised connection to the village on account of the presence of lower caste families.

In both sites newspapers are accessed and circulated through male dominated spaces such as tea shops. Newspapers are rarely taken into the home, except in the form of old copies used to line shelves or cover surfaces. Women therefore do not have access to current newspapers and their content, except via male members of their households who may discuss the contents of newspapers.

Cable television has a large take-up in the slums, despite the cost of RS150 per month. However, women were not expected to watch TV unless their domestic chores had been completed and we witnessed one young wife being badly beaten in the street by her mother in law and husband for watching TV. There are very few TV sets in the village though this is set to change with local cable operators extending their networks. In both cases cable TV offers a channel that might be utilised for development purposes to reach women in domestic spaces in particular.

Radio is generally heard in the slums as an omnipresent soundscape extending into the narrow lanes and densely packed homes. Film songs and cricket are the most commonly cited reasons for listening. The community radio initiative in the rural site is limited in effectiveness by the number of narrowcasts that can take place, and as the whole area is covered by one part time volunteer team, this is minimal. However, women and men in equal measure turn out to hear the programmes which would have a far greater reach if broadcast terrestrially or via a cable TV channel once the cable network has been extended.

Women use the telephone to make or receive calls from relatives living or working elsewhere, either through the few telephones present in the village or slum or more commonly via STD Booths. When making calls, women generally do not dial but are offered assistance from men. When receiving calls women would only answer a telephone if no males are present.

Livelihoods and economy

In both sites there are extended families separated for long stretches of time because of the search for employment. Remittances play a key role in the livelihoods of these families. The telephone is used to request, inform and check on remittances.

Understanding how villagers with low levels of education maintain a reasonable livelihood is complex – those with irrigated land may supplement their agricultural produce (largely grown for their own consumption) with wage labour, though this is often taken up in Delhi where their caste is not compromised by undertaking menial jobs. Those with surplus land may lease it for a fixed rate. Some produce including milk is sold to middle men. Others barely survive through sustenance farming. There is a strongly limiting effect of caste on employment opportunities which plays a key role in men migrating to urban spaces for employment while women remain in the village to work the land.

In the urban site the majority of the employed population work as casual labourers or factory workers. Employment is generally insecure. Whereas casual labourers used to have to travel great distances within the city on the chance that there would be some work for them, now it is more likely that they will use STD booths to establish where the days work is, saving time and money. Many economic exchanges in the slum are not declared, and sometimes illicit (as in the selling of alcohol or drugs). As the slums are now long established many small enterprises have emerged which adapt to changing markets and needs. These enterprises benefit from location within (and often on the edges of) slums as they do not pay rent for the land and largely avoid taxes.

There is a felt need to maintain below poverty line status in both sites in order to access government schemes and rations which obscures the real picture of the economic situation and points to complex strategies for maintaining livelihoods.

Appendix 6: Jamaica Summary Findings

Information Society: Emergent Technologies and Development Communities in the South

Jamaica – Summary findings

Information Society Research Group (ISRG)

ISRG is a UK Department for International Development (DFID) funded university consortium that comprises University College London, Queensland University of Technology, The London School of Economics and The University of Adelaide. The research group draws together institutions and researchers with an interest in producing qualitative insights into the digital divide and processes of communications for development.

ISRG Summary Findings

Key sheets are a short format for the disseminated of main findings. These are available through ISRG's own website www.isrg.info and through sites such as Eldis, ID21, The Communications Initiative and DFID's i-connect online.

Introduction

As the fourth most heavily indebted emerging economy (*The Economist* 28/8/04, p.39), Jamaica's overall economic development is patchy. The Economic and Social Survey (Planning Institute of Jamaica 2004) reports GDP at US$234.1 billion in 2003, with bauxite and tourism contributing a significant portion of this figure. While the 2003 figure represents 2.1% growth, the Jamaican economy has experienced a consistent decline in sectors such as agriculture and manufacturing. Significantly, manufacturing provides 66,000 jobs whereas tourism supplies 387,400 jobs for the island's 2.4 million annual visitors. Despite the growth of tourism, between 60% - 70% of national revenues directly goes toward the servicing of the country's debt, which the World Bank (2004) observes is 150% of the GDP. As a result, it is difficult for Jamaica to obtain credit from international sources (Planning Institute of Jamaica 2004, World Bank 2004). This is a legacy of what many see as the disastrous impact of structural adjustment and a long term suspicion of Jamaica by the USA in particular, following Jamaica's attempts to develop a more socialist orientation under Michael Manley in the 1970's following independence in 1962.

Although the internet has yet to develop a strong presence in Jamaica, the cell phone can be considered ubiquitous and has had an important impact upon the day-to-day survival strategies of rural and urban Jamaicans. According to the USAID/J_car Sustainable Development Plan (1/06/04), unemployment remains around 15-17%, but the World Bank (2004) notes unemployment of 14-19 year old poor youth was 47% in 2001 (21). However, we observed considerably less formal employment in the households we surveyed, only 18% of households included one or more individuals who were employed and received a salary on a regular basis. Given that the vast majority of the low income population studied earned their income piecemeal, such as through small scale vending and day work, the receipt of remittances and social connections, the impact of cell phones has been dramatic. Before 2001, cell phones were largely the property of middle and upper class Kingston. Today, there are two million subscribers in a population of 2.6 million, an average of three phones per household. Jamaica provides an important example of the impact of WTO push to liberalisation and the different responses by commerce. Critical to the rapid spread of the phone has been the actions of a new licence holder for cellular telecommunications, Digicel, against the actions of the incumbent Cable and Wireless. Equally important has been the role of the Office of Utility Regulation and the systems of embedded regulation, which

previously developed through DFID funding. These factors represent the single most important determinant of whether these new technologies are cheap and accessible. This also determines the balance of benefit to the populace as opposed to the commercial interests of the companies.

Research Context

Fieldwork took place for the twelve months of 2004 and involved a range of qualitative methods, including participant observation. The surveys also included a very intensive daily budget analysis to ensure that figures for income and expenditure matched and a broader household survey of 100 households which accounted for their income, livelihoods and possessions, including use of all media and ICTs. Qualitative work concentrated on the impact of the cell phone, which has dramatically increased in the last three years, and the small degree of internet usage we observed.

Half of the research was based in an area of central Jamaica we refer to as "Orange Valley". Orange Valley is a farming region well known for the profusion of citrus, cocoa beans, sugar cane and basic provisions such as yams and green bananas. The region is characterised by low-income and low employment; only 16% of the households surveyed participated in full time formal employment. Although based around a small town of five to six hundred people with a school, police station and market, most of our research was conducted in the straggling hamlets along roads and hill crests in the surrounding hill region. We estimate that the hinterland of people that would use Orange Valley as opposed to other towns in the region as their transport hub is around 14,000. According to our survey the average household in the Orange Valley area was rather large, at 5.2 people. While land lines became available to the wider public in the late 1990s within the town of Orange Valley, the land line telephone system had failed to reach many of the rural settlements. Notably, only 6% of households did not possess a cell phone; these households were inhabited almost exclusively by individuals over age 60.

The second portion of the research was carried out in a low-income settlement in Portmore, a municipality located on the outskirts of the capital Kingston. Built in the 1960s to counteract the overcrowding of central and western Kingston where many rural migrants were based, Portmore represents the latest development of large scale urban settlements based around small slab built constructions on land plots then expanded by owners. Home to 200,000 residents, it is characterised by high youth unemployment. Our primary research site was located in a place we call "Marshfield". Widely known as one of Portmore's "ghettos", it remains a hotspot for crime and violence. Due to the uniformity of the scheme built by the National Housing Trust, living conditions could be considered relatively high (with indoor plumbing and electricity), but conditions were also cramped with little ventilation. Located at sea level with a propensity for low level flooding, mosquitoes were a common problem for many residents. Moreover, given that only 20% of the households surveyed were formally employed, these amenities were seasonally unreliable and came with a large price tag which often placed urban residents in a more precarious economic situation than their rural counterparts who benefited from farming. While many of the households enjoyed the benefits of land lines which were established in the early 1990s, many households opted to remove their house phones and replaced them with cell phones which were owned by every household surveyed in the area.

New networks and the management of remoteness

The cell phone has rather rapidly been incorporated into Jamaican social and economic life. It has been used to intensify relationships between immediate and extended family and friends, particularly given the transnational character of many families wherein one or more relations may be living abroad. Unlike in the past when phone calls were expensive and

had to be initiated either through a collect call or by the family member living abroad, the particular pricing structure of the cell phone now allows low-income Jamaicans to call abroad without intervention from an operator. This has been particularly beneficial for the maintenance of the family, such as children who are being cared for by family in Jamaica while their parents work abroad.

While the cell phone intensifies relationships, particularly amongst kin, by far the most important usage of the cell phone among low-income Jamaicans revolves around the creation and maintenance of extensive social networks, what we have termed "link-up" (See Horst and Miller 2005). Low-income Jamaicans constantly look for opportunities to expand their personal networks. The cell phone becomes an ideal instrument for this purpose given its capacity to save names and numbers, ranging from 11 numbers in the smallest phone list we encountered to 209 names and numbers in the largest phone lists. Most Jamaicans purchase pre-paid phone cards which they use to make a series of short calls (an average of 19 seconds). These short calls indicate to the recipient that they are remembered and thus sustains the connection until the time when there is a more specific reason to have more sustained contact, such as a visit to the person, a request for money or information or the establishment of a friendship or sexual relationship.

Health and welfare

The recent World Bank report on Jamaica saw crime as one of the principle bottlenecks in preventing a more sustained economic development, with Jamaica having the third highest rate for violent crime in the world. With 1471 homicides, 2004 was one of the most violent years in Jamaica. Certainly Portmore and Marshfield were not immune particularly given the proximity of Portmore to Spanish Town where violence ensued after the demise of a key member of the `One Order' gang. The parish of St. Catherine alone experienced 174 homicides, including 71 in the Portmore area of St Catherine South. During our six months residence, we were aware of at least eight gun or knife incidents, half of which resulted in fatalities. Nurses at the local clinic discussed shortages in dressing supplies at the underfunded public clinics where men recovering from gun and knife wounds are sent for follow-up care. Nurses reported having to ask the men to contact families and personal contacts to help them to purchase dressing for the wounds.

The cell phone has been immediately beneficial in reducing the impact of crime as it is experienced by low income Jamaicans. The impact may be less through the actual reduction of crime, but more by enhancing the sense of security especially in remote areas. Residents generally felt more comfortable with the knowledge that they could contact the police within the relatively private confines of their home and police men and women all noted that they received information and anonymous tips through their personal (and unfunded) cell phones. This is vital in a country where the recent World Bank report sees crime as the central battlement in further national development and we would strongly encourage the Jamaican government to find some source of remuneration for their civil servant's use of the cell phone in effectively carrying out their jobs.

The most important impact on health comes indirectly through the larger `communicative ecology' by which the cell phone enables the taxi system to more effectively link remote rural areas doctors, hospitals and other health care providers. Without an extensive or reliable ambulance service, quick transport is for the first time available in emergencies. In addition, the role of the cell phone in garnering remittances for the payment of medication or health treatment, particularly for the children and the elderly. This form of social networking also occurs locally and has made an important difference in rapidly accessing money required for medicines and treatments.

Outside of formal measurements of health, the cell phone is of considerable importance in alleviating what Jamaicans themselves describe as `pressure', which includes elements of

loneliness, depression and boredom. Many Jamaicans view the phone as a way to reach out to others when they are in need of advice or 'counselling', which is particularly important for many low-income Jamaicans who cannot afford and therefore have little access to formal counselling professionals. An integral part of this has been the way the phone links with the church networks as critical in the alleviation of these social problems for a significant sector of the population. Again, qualitative ethnography reveals a major and positive impact on welfare issues of central concern to the population but which is not often considered as part of formal measures of welfare.

Civil Society strengthening and rights

Our fieldwork also reveals a tension in the operations of the government and welfare institutions. Because the state has traditionally been relatively weak, providing little in the way of infrastructure, health and other benefits, low income populations in this area possess a highly developed form of networking to cope with their everyday health and welfare. When new programs are introduced, such as food stamps, the PATH programme (which provides a small amount of money towards the payment of school fees, transport and lunch money) or the National Health Fund, most Jamaicans are reticent and sceptical of the government's intentions. Rather, they prefer to maintain individual networking often based around forms of networking, such as sexual liaisons which have no obvious welfare benefit. Policies that are sensitive to local feelings and preferences for this individualism are in most cases incompatible with policies intended to prepare low income individuals for competing in an increasingly global economy. Government policies that force individuals to change entrenched customary practices because of a sense of the longer term and larger interests of the population are unlikely to be popular at least in the short run and will diminish the specificity of this population.

Qualitative fieldwork has also led to a critical evaluation of policy with regard to the spread of the Internet. Much of this is predicated upon a concept of community and assumptions about direct relationships between the citizen and the state which are clearly not appropriate in the Jamaican case. Many millions of dollars are likely to be wasted on NGO based projects for universal access which do not mesh with the specific conditions in Jamaica. Our evidence also suggests a marked dislike of household, school or other collective based computer access and we have elsewhere (Miller and Horst 2005) argued for the development of WAP and other cell phone based internet access.

Education

As noted previously, Internet access is extraordinarily low among low income Jamaicans. In part, this situation reflects the high connection rates charged by the local Internet providers. At the moment, the Jamaican government is constructing a new fibre cable and developing a programme to provide universal access throughout Jamaica. While cheaper access looks promising, our evidence suggests that more transformational changes need to be made, because our evidence suggests lack of demand not just lack of access. Changes might include the ways in which the authoritarian education system prohibits access to students who are not considered as promising as others. In addition, the government plans to use video feeds of teachers from the best schools in Jamaica within the primary and secondary schools. We, however, would contend that this will ultimately be ineffective. Rather, these video programmes would be best utilized among the adult students retooling or training at the HEART/National Training Agency schools where students, many of whom have school aged children, are highly motivated and seek cost-effective and convenient job training.

Contrary to current policy in favour of producing local content for Internet based education, we found most Jamaican's to be well aware of international production standards and to feel

anything of lower quality was patronising. We suggest there are huge efficiencies of scale in creating universal Internet based (phone as well as computer) basic teaching materials in topics such as geography, language, physics, car maintenance, use of computer packages and other basic skills. These could be produced under the auspices of bodies such as UNESCO and make effective use of the Internet's ability to access global media at a local level.

In terms of the cell phone, the impact on education is generally detrimental. While students used the phone to call other students about assignments or to find out about missed classes, our research with schoolchildren and teachers suggests it is mainly a distraction, which may also facilitate illicit relationships. It does, however, make parents feel more securely in touch with children who travel extensively to and from school and it has become an important component in the attempt by students and their parents to source money from their relatives abroad as well as in Jamaica to support the cost of transportation, materials, clothing and school fees.

Gender Equity

Cell phones are used and owned equally among low income Jamaicans of both genders. However, there are differences in usage. The cell phone has become important to many women coping with the 'pressure' associated with the loneliness that may arise both from having children, and from children leaving home. It has also provided an additional outlet for the release of stress, tension and pressure, particularly where traditional social networks have failed or let individuals down. It is equally central to the way men deal with the pressure they associated with the boredom, often felt within the more communal setting of hanging around at street corners. In both cases it may become the means for alleviating pressure, but is subject to overuse bordering upon addiction which may in turn increase the feeling of pressure.

While men and women are known to sell pre-paid phone cards, women who live and work in the home have found this enterprise to be a natural extension of their home-based entrepreneurial activities. Many women who might also sell chickens or other services out of their home may also save enough capital to purchase a packet of 25 cards at a wholesale price which they resell at a higher rate to their friends and neighbours. This typically produces enough income to sustain the practice as well as enough money to fund their own phone usage, lunch money or transportation for their children. The phone system itself become one of the most comprehensive forms of micro-credit and debt exchange systems to operate amongst the lowest income households, and has become in itself an important link to more formal systems of commerce and credit.

Livelihoods and economy

Qualitative ethnography proved central to understanding the impact on poverty reduction and coping strategies. Our budgetary analysis showed that more than half of household income is derived through social networks and personal contacts rather than through employment, sales or work. For this reason, phone use is based on the long-term maintenance of large scale but shallow social networks. The particular members of an individual's network may be called upon in times of financial, emotional, sexual or social need. By contrast, the phone is rarely used to either help obtain jobs or to develop entrepreneurial activity. An extension of this social networking is the facilitating of remittances from the Jamaican Diaspora, which is probably the main bulwark against rural depopulation today.

Notably, those individuals who used the cell phone for entrepreneurial purposes were not the lowest income individuals. Rather, these individual possessed regular employment and/or the support of an extended household and used the cell phone as a way to make supplemental income, such as through the selling of eggs or as a way to charter taxi work.

In other words, and contrary to the expectations of most economists, among the lowest income groups the technology is used largely to obtain money rather than to make money, i.e. as a distributive function. This possibly reduces the capital that might have otherwise accumulated and been used for entrepreneurial purposes.

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Appendix 7: South Africa Summary Findings

Information Society: Emergent Technologies and Development Communities in the South

South Africa – Summary findings

Information Society Research Group (ISRG)

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ISRG Summary Findings

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Introduction

South Africa is in the middle tier of ICT development, according to Bridges.org, with a relatively large and growing population that has access to ICTs, and especially mobile telecommunications (2002). Like many other countries with a large gini-coefficient, it has a large internal 'digital divide'. However, South Africa's attempt to redress historical injustices in the ICT sector has had some success, and thus is a demonstration of the positive role the state can play in structuring the sector in such a way so as to overcome the 'digital divide'. The conditionality imposed on the original cellular licences has seen the rollout of many cellular services to remote and under-serviced areas.

The unemployment rate in 2005 stands at 26%, which in the context of a highly monetized cash economy and relatively urbanized citizenry, makes for severe levels of poverty; by some measures, about 48.5 per cent of the South African population (21.9 million people) currently falls below the national poverty line of R1290 (US$ 190) per month income or less for a household of four persons (UNDP, 2003). The question of access to ICTs in South Africa needs to be differentiated carefully in terms of a range of technologies, historical trajectories, and socio-economic processes. While most poor black people do not have access to computers or Internet services, radio, television and mobile phone use is high. The South Africa research supports the assertion that access to information and communications tools are crucial to the livelihood strategies of the poor. Grounded understandings of the role of communications in the livelihood strategies of the poor have been rare, and it is to this end that ethnographic research into the communicative ecologies of particular poor communities in South Africa has been conducted.

The research conducted in two provinces of South Africa, the Western Cape and the Eastern Cape reveals that poor people make investments in ICTs to maintain complex family networks that enable both money, in the form of remittances (urban to rural), and employment (rural to urban, and within the urban context) to be secured. The need to manage distance, principally through mobile telecommunications, is the foremost driver of technology uptake for poor people. Internet was found to be relatively insignificant to poor people in both rural and urban research sites, though significant issues relating to social communication practices were found to impact significantly on the securing of welfare payments, the negotiation of risk and disease, especially in the context of HIV and AIDS

and also in processes of community organisation relating to patterns of urban informal settlement. South Africa, unlike other contexts in the research, continues to suffer from the legacy of Apartheid, and many of the poorest people interviewed perceived of technologies such as Internet as something that they had no 'right' to use. Equally, many poor people still find it difficult to negotiate formal institutions such as the social welfare department, but banks and black economic empowerment institutions are equally beyond the poor's reach.

Many of the households interviewed in the South Africa research were selected in consultation with the University of Western Cape's Chronic Poverty Research Centre and these are compared and contrasted in both research sites with better-off households.

Research contexts

Research occurred in both an urban and rural site. The urban site consisted of a cluster of suburbs within the township of Khayelitsha on the fringe of the City of Cape Town, Western Cape. These suburbs varied in formality of tenure, from a long-established suburb known as Site-B, to a more recent government-built suburb called Kuyasa and the neighbouring informal settlement of Nkanini. In terms of security, risk and poverty, the informal settlement of Nkanini contained the poorest informants and so the bulk of urban research was conducted amongst the thousands of crude corrugated iron shacks that populate the sandy dunes of the area. Nkanini suffers from poor services, high unemployment rates, and high levels of crime. Nonetheless, mobile telecommunications in particular were found to be of importance to the community, as well as less complex technologies such as loud hailers and practices of social communication such as protesting and rumouring. Alongside these patterns of communication considerable NGO and CSO activity was found to occur, particularly in the area of outreach and awareness raising for HIV prevention and AIDS care and support.

In the Eastern Cape, the small village of Gibson Mission was the focus of the rural research. Though a considerable distance from Cape Town, the logic for choosing Eastern Cape resides in the strong historical and ongoing patterns of rural-urban migration from such regions to Cape Town. This enabled the research to trace connections between rural and urban locations that could be followed up. Also, the Eastern Cape displays a high incidence of poverty and low agricultural outputs. As a medium income country South Africa has a well-developed social welfare system, a system that was the focus of much research. Many rural areas are extremely dependent on social welfare payments, especially child support grants, disability payments and old age pensions. The history of male migration, rural to urban, has left many female-headed households and displaced care-relationships within rural areas. The very many children in rural areas stand in stark contrast to a missing generation of parents and young people, decimated by AIDS. Recent figures released indicate that 1 in 3 deaths was as a result of AIDS. During the research period there was an AIDS related funeral each weekend in the village as numerous adults return from urban areas in the advanced stages of AIDS so that they can die in their home villages.

New networks and management of remoteness

Telecommunications are significant for poor people in the way that they manage remoteness and maintain networks. Key findings include:

1. Government provision of licences for telecommunications 'community services' at reduced costs has had a significant impact on both urban and rural South Africa. The logic of small enterprise and black economic empowerment has been used to extend services (as small businesses) to even remote rural areas. In urban areas, phone stores in shipping containers are highly visible and most South African's (rural and urban) now have a telephone service within a 30 minute walk. Community

service licensing, when combined with small enterprise stimulus, can play a critical role in extending services to poor areas.

2. Mobile telephone ownership is high even amongst disadvantaged populations, 28% of the rural households interviewed owned a mobile phone, compared with 29% in the urban research context.
3. Low incomes create an intricate dynamic between cheap 'container' phone outlets in urban areas or stand-alone commercial phones in rural areas and more expensive mobile phones. Typically calls are made at commercial phone points, whilst calls are received on mobile phones. Though making a call may mean a walk of 30 minutes to an hour in rural areas to the public access point, the small saving this generates is significant and makes it worth it.
4. Mobile phones are usually perceived as a household item and are used collectively to receive calls. There is a considerable amount of phone lending to relatives and neighbours and it is common for households to give family members the cell number of a neighbour in order to maintain contact.
5. Due to the high degree of rural to urban migration mobile telecommunications are extremely important to maintaining social linkages and to practices of remittance giving. This is evidenced by 17% of all calls made referring to securing remittances from urban kin.
6. Mobile telecommunications have facilitated better connections and stronger networks between rural and urban areas; that most informants recognise the importance of telecommunications to their livelihoods suggests that it is seen not as a luxury, but an absolute necessity. Indeed, a significant portion of remittances received goes to maintaining phone connections and by association, extended family networks.
7. Other aspects of new networks can be seen to emerge in the urban context where text messaging and mobile telecommunications have become central to community organisation and claims to rights and services. Here, texting amongst community leaders has resulted in more efficient forms of organisation and community mobilisation, in this instance against evictions from an informal settlement on the fringes of Cape Town.
8. Texting and the free 'call me' function available on South African mobiles has also played a significant role in social and community organisation.

Health and welfare

A relative wealthy and technologically proficient government is battling with extremely high rates of HIV and AIDS and (particularly in the Western Cape) TB infection. While there are purportedly high levels of formal literacy, in practise most poor black people are illiterate and bear witness to the apartheid state's discriminatory education policies. Urban communities are well versed in the uses of radio and community health workers as important information tools. In addition to lower levels of literacy, rural communities struggle with a dearth of infrastructure and organisational capacity when it comes to implementing effective health promotion strategies. In terms of welfare provision, success in obtaining grants requires literacy in interacting with and subsequently 'claiming' the state; this is in spite of access to welfare payments being a right in certain instances. This mode of communication does not depend on formal 'technologies' of the conventional kind, but requires an understanding of, and literacy in, a particular method of interaction: whether in a welfare office, clinic, magistrate's court, or home affairs department, knowledge of the tone of language, the jargon, expected ailments or complaints, all appear to play as important a role in acquiring state benefits as the official set of requirements, which, as framed by rights enshrined in the Constitution of South Africa, are widely recognised as being progressive and just.

1. The incidence of HIV and AIDS are high and research found that though knowledge of how to prevent HIV was high, as was free condom availability, safe sex often was

not practiced. This was principally as a result of certain powerful social rumours that tended to counteract the considerable amount of mass-mediated and NGO/CSO outreach work undertaken in the community, such as the popular Yizo Yizo realist TV drama and the Lovelife youth centres. The availability of treatment in the shape of antiretroviral therapy (ART) has had an impact on HIV prevention strategies. This combined with rumours that government condoms come pre-infected with HIV or with 'small worms' that will kill you in three days, leads many young people to state they will risk HIV and live for 10 years or more with treatment rather than risk sex with a contaminated condom. This rumour was strong and found in both the rural and urban sites. There was little evidence that either government, NGOs or CSOs, was actively countering these rumours.

2. The key finding relating to welfare was the extent to which a lack of information about the 'self', i.e. birth certificates, death certificates, passports or ID documents, hampered poor people from claiming welfare benefits. Poor people find it very difficult to negotiate the state system that provides such evidence, especially in rural areas, where state offices may be remote. This means that many poor people struggle to prove identity and are denied benefits that are critical to rural livelihoods. This is compounded by a high degree of corruption in the welfare system that allows many able bodied people to claim disability grants. Poor people were generally found to be less able to negotiate such corruption.
3. Emerging technologies were also significant in negotiating the state welfare system and in issues relating to health. Health was found to be a significant theme of telephone discussions (18%) in rural areas, whilst 10% of all calls concerned social welfare payments. Generally telephone enquiries or Internet use relating to these themes was found not to occur due to their relatively high cost.
4. A significant success in welfare and advice giving was found in the manner in which the welfare department visits each main rural centre every month to pay grants. An increasingly hi-tech ICT system underlies the state's ability to disburse welfare, such as mobile remotely networked cash dispensers, fingerprinting and ID cards. At these occasions, often held in schools or the compound of the village chief, social workers are on hand to deal with issues relating to welfare and acute poverty. In essence the state is making great strides to take welfare to poor people, though issues relating to identity documents still confound many poor people's attempts to access and claim the state through payments.

Civil Society strengthening and rights

Numerous civil society and community-based organisations exist alongside the many NGOs in South Africa. Urban and rural areas can be contrasted in terms of community organisation, with traditional authority (chiefs) holding sway in many rural areas, whilst political authority tends to dominate in urban areas. This gives rise to differential social investments and strategies for claiming rights to services and some basic provisions associated with the South African constitution, such as rights to shelter (afforded to children and by association adults). The role that communication plays in broader community struggles for social development is extremely significant. This communication is often social (i.e. face to face), but also extensively mediated by electronic communication, and especially cellular phones.

1. Community committees, such as social welfare committees, were found to be effective at communicating the infrastructural needs of rural communities. Often these needs pandered to better off people within society and the input of such committees in areas of poverty and need were found to create high levels of exclusion, often for the poorest.
2. In urban areas, where a street committee structure operates, in which each street has a representative on a wider community committee structured through the South Africa National Civics Organisation (SANCO), lower levels of exclusion operate. The

urban committees are more politicised and there is better access to social welfare grants in urban areas that reflects a higher degree of civic literacy.

3. In such areas established and emerging communities (such as those in new informal settlements) understand that community solidarity is critical to securing rights to key services such as water, sanitation and housing. That solidarity is communicated in a number of ways, through militant protest, through lobbying local councillors, and through directly approaching City municipal authorities.
4. Community committees and leaders are broadly dependent on cellular phones for organising community action. Such technologies allow an increasingly rapid community response to threats – such as from the police trying to evict residents from informal housing – and allow for the organising of community meetings, where older technologies such as loud hailers may be used to communicate to large gatherings.
5. In addition to community organisation, the many community-based and non-governmental organisations working in the townships have developed communication strategies in support of such areas as HIV prevention and reducing violence against women. Here community outreach, literally going from door to door, as well as peer education and counselling appear to be the most effective means of communicating with people 'at risk'. Though many initiatives have used mass media to communicate with communities, interpersonal communication dominates as a preferred communication mechanism

Education

The legacy of apartheid social engineering has left the education sector with many challenges, not least of which is organisational capacity and personnel. The sector reflects larger social divides of those with resources and those without. In poor communities, schools battle to find quality teachers, basic teaching resources are scarce, and the professional environment is not attractive for teachers. Problems range from national issues around curriculum design and assessment techniques to local crises of food, water, and transport. Schools in the Western Cape reflect a highly divided society and remain largely segregated. While some schools have been the recipients of donor' funded computers and Internet access, on the whole these efforts are seriously challenged by a lack of capacity to maintain the equipment, theft, and student literacy.

1. Schools based computer and Internet initiatives are patchy, and use is subject to considerable gatekeeping by teachers. Schools suffer from a high incidence of theft, as do private computer training schools, and an inability to protect expensive equipment, such as computers, has restricted their roll out in poor township schools. Many poor school children have low IT literacy and though many are aware of computers and their use in business, most poor schoolchildren of all ages have no concept of the Internet and what it contains. A problem with language emerges here, with few websites existing in local languages such as Xhosa or Zulu, whereas English and Afrikaans have a strong national presence. For Xhosa speakers, especially in the Eastern Cape, this leaves very little material with which to articulate personal issues and interests?
2. In the rural Eastern Cape, IT literacy is extremely low, with the village school children in Gibson Mission having little understanding of what computers were or did. Where a basic knowledge of computers was evident the e-mail function of the computer was understood to be not that different from the existing uses of the mobile phone such as texting. This could have two implications for this more IT literate section of rural society. First that the roll out of Internet/e-mail and an increase in its use could be facilitated by familiarity with mobile phones, or actually hindered because there is little differentiation between the two communications technologies in terms of functionability. Regardless of these positions the key barrier to wider Internet access and use remains that of basic cost. Rural Internet

access rates in small towns such as Mount Frere were R45 (US$6.65) for 30 minutes, which is roughly equivalent to 15-20 short telephone calls.
3. A skills gap exists in South Africa for high level programmers and network specialists, but it is unlikely that poor people from the townships will fill these roles. Where tertiary education is undertaken, usually in privately run computer schools, the basic skills are taught alongside the easy and popular Microsoft programmes. The hope of many students is that they will be able to transfer these skills to unrealistic forms of employment such as complex programming.

Gender equality

The communicative ecologies that new technologies are embedded in highlight current social processes, particularly with regards to the gendered nature of access to and use of ICTs. The history of labour market manipulations by various governments in South Africa has impacted greatly on current trends in an increasingly globalised local economy, such that many more men find themselves unemployed, while more women are coming to play more important roles in household finances and decisions. As the informal economy absorbs more and more poor people from the 'jobless growth' of the formal economy, women's historically casualised work as domestic labour has come to play a more important role in securing regular income. Thus, a cell phone that many people in a household may use is most likely to be owned by the matriarch of the family. While ownership of and general access to cell phones appears to be unaffected by gender, more traditional conventions around gender still operate, such that those in less powerful positions must defer to those above them – younger to older, women to men. That said, the history of struggle in South Africa against apartheid has made for a complex set of gender relations, in which women speak their minds, occupy powerful positions, and yet also suffer battery, rape and abuse.

1. Men and women tend to use ICTs in different ways for different purposes. Women's use of cell or container phones tends to be more 'socialised' and concerned with reproducing the household through the maintenance of social networks, i.e. that enable remittances or mitigating health concerns. Male use tends to focus more on job seeking –often fruitlessly – maintaining friendship networks and clandestine relationships. A more instrumental approach to social networks appears to underlie much usage by men in poor areas.
2. Cellular phones are key markers of social and economic status and are often 'worn' in a highly visual way in townships – often around the owner's neck. Though this has led to robberies of cell phones and potentially increases the risk of gender based violence, there is a highly localised set of implicit rules about how, when and where one can brandish such status symbols as cell phones, car keys, or jewellery. The use of cell phones as status markers mirrors and highlights existing social relations, which contain within them complex contours of 'safe' or 'appropriate' behaviour

Livelihoods and economy

The role that telecommunications play in livelihoods is critical. Rather than being luxury items that are used to increase one's status and standing, or symbolic capital, cell phones are in fact crucial to the livelihoods of many poor people in South Africa as communication tools that enable social networks to be maintained, remittances to be transported, and families to remain connected. The ways in which mobile phones are put to use in South Africa reflect the complex strategies in which poor people strategically engage in the support of a range of livelihoods. While the rollout of mobile telephony has enabled many to survive, it has simultaneously played an extractive role in that the costs of this telephony are extremely high. In addition, many of the poorest people are not able to afford mobile telephony at all, and thus face a new kind of discrimination or exclusion. The importance of

progressive ICT policy frameworks devised by socially responsible governments has been demonstrated in part in South Africa; much remains to be done though in making cheap mobile telephony available to all.

1. However, the telecommunications sector in South Africa has and continues to play an important role within the small enterprise development sector. Many previously disadvantaged people have been able to establish small enterprises making use of cellular technologies (such as public phones), Internet cafes, or public televisions (pay for view). The business models designed by the cellular service providers allow for individuals to initiate one-person enterprises selling telephony on street corners or spaza shops, by directly buying and reselling airtime and connectivity. Whilst highly profitable for the large service providers, it has also allowed micro entrepreneurs, most often from an existing elite, to run successful businesses.
2. The wider availability of telephony has enabled many related business activities to flourish, most notably transport. However, the potential for new technologies to enable economic activities for the poor to grow is currently limited by structural constraints that inhibit economic growth for the poor in South Africa, such as the loss of jobs in mining and production, legacies of infrastructural underinvestment in former homelands, and access to land tenure and capital.

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

Andrew Skuse and Thomas Cousins

February 2005

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

Information Society Research Group (ISRG)

ISRG is a UK Department for International Development (DFID) funded university consortium that comprises University College London, Queensland University of Technology, The London School of Economics and The University of Adelaide. The research group draws together institutions and researchers with an interest in producing qualitative insights into the digital divide and processes of communications for development.

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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.

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Appendix 9: ISRG Working Paper 2

ISRG

Information Society Research Group
Working Paper No. 2

Understanding Demand:
A Proposal for the Development
of ICTs in Jamaica

Daniel Miller and Heather Horst

March 2005

LSE

THE UNIVERSITY OF ADELAIDE AUSTRALIA

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Information Society Research Group (ISRG)

ISRG is a UK Department for International Development (DFID) funded university consortium that comprises University College London, Queensland University of Technology, The London School of Economics and The University of Adelaide. The research group draws together institutions and researchers with an interest in producing qualitative insights into the digital divide and processes of communications for development.

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Understanding Demand: A Proposal for the Development of ICTs in Jamaica

Summary

This discussion document is primarily concerned with ICT policy as it might effect and potentially transform the welfare of low-income communities in Jamaica.[1] It is based on anthropological fieldwork with low income Jamaicans conducted during 2004, which comprised six months residence in rural Clarendon and six months in a low-income settlement within Portmore.[2] Dr Heather Horst was resident throughout while Prof. Daniel Miller resided in Jamaica for less than four months. Although part of the project involved an extensive survey of one hundred households and an intensive budget analysis of twenty households, most of our work was based upon developing trust and rapport with families over several months while carrying out formal and informal interviews. It also involved living within such households in order to develop our understanding of daily life. In addition we have interviewed a range of personnel working for the IT industry, government and particular services such as teachers and medics.

Main Recommendations

(i) Refocus e-learning initiatives to adult education

(ii) Liberalise attitudes regarding access

(iii) Increased collaboration or partnership between commerce and government concerning ICTs

(iv) Invest in low-priced computers without gaming facilities

(v) Use of kitemarking

(vi) Creation of a National Portal

(vii) Stimulate, and do not assume, demand for Internet use

(viii) More serious consideration of Internet through the phone

We are anthropologists and do not claim expertise either in the telecommunications industry or the other sectors discussed in this paper (e.g. education). Rather, we are generalists by training and what follows should be treated as suggestions based on a broad picture of Jamaican ICT use in the light of the current plans to expand the industry.[3]

Introduction

The starting point of this discussion paper is the plan by the Jamaican government to introduce a Universal Access Fund. In effect, the Universal Access Fund would be a tax on the telecommunication companies operating in Jamaica. The documents issued by the government and circulating within the Ministries justifies that this tax is based on a particular perception of the recent history of telecoms in Jamaica. As in much of the Caribbean, the incumbent telecoms company is Cable and Wireless (henceforth C&W), which has been active in the area for over a century. Virtually all of the 100,000 commercial and 400,000 residential fixed lines in this country of 2.6 million people are with C&W. It is also the main ISP, although Internet penetration in general is fairly low (see below).

The sector was radically changed when the government followed pressures by the WTO and other bodies to liberalise and issue licences for cellular communications. One of the licenses was purchased by a company now trading as Digicel, which was founded and funded by Denis O'Brian, an Irish entrepreneur. Commencing operations in April 2001, the company had sold one million cell phones by 2004. Today the average household in Jamaica possesses three phones. The premise of the Universal Access Fund was that the government's responsibility for ensuring phone access to the population had been achieved through commercial success. But the government also claimed that it also possessed a responsibility to ensure mass access to the Internet and was concerned by the low

figures for current usage. It therefore created the Universal Access Fund as a means of capitalizing on the success of the phone industry and using the money to find ways for the state to itself promote access to the Internet.

In contrast to the ubiquity of the cell phone, only 3% of the population are on- line through the computer and there is a remarkable paucity of cyber cafés outside the main tourist areas compared to countries of similar income level (e.g. our team currently working in Ghana). Our ethnography shows the Internet as having had little impact on low income Jamaicans. Indeed, within the low income communities we studied we saw more evidence and enthusiasm for the Internet through the cell phone than through the computer.

The discussions of the Universal Access Plan conclude that the cell phone can now be regarded as a commercial concern, while providing Internet coverage for the Jamaican population has become a government responsibility. One imagines that commercial bodies would reach a very different conclusion. Given the success of the cell phone, the only regret of some companies is that the government did not initiate a new cable at the same time it issued licences for the cellular. It is now taking this measure. This should lead to competition and the lowering of prices. Commercial companies might conclude that Internet provision will then spread along the same commercial lines as the cell phone, and that therefore this is no case for government intervention.

The problem with this argument is that it is not merely provision of access that is of concern; it is also the use and consequence of these media. For example, there is general agreement that the primary crisis in Jamaican society lies within the educational sector. The growth of cell phones has, on our assessment, been detrimental to this sector. It is largely a distraction within the school day as, in effect, a disruptive toy that children take with them to school, very rarely of qualitative educational benefit. The same could become true of the Internet. If the Internet is introduced merely under market forces, this might simply lead to an explosion of game playing and downloading of music and pornography. It might be argued that the role of government is to ensure that innovations are made beneficial to the community.

A more apt criticism revolves around the principle of Universal Access since it is the *effect* not the provision of ICTs that should of concern to government. We will therefore start this document with an examination of the current effects of ICTs in Jamaica and a discussion of their potential in arenas of concern to government. We then consider the more general question of the level and nature of demand for the Internet as well as an examination of current government plans. We conclude by introducing a proposal for new initiatives which involve the collaboration of government and commercial interests.

Education

Recent reports suggest that standards in Jamaican education are low and falling (Bailey 2000, 2001, Economic and Social Survey 2003: 22:12; cf. the controversial 2004 Dennis Minnot report). In contrast, the telecommunications industry is undergoing tremendous growth which has considerable educational potential. The temptation is therefore to view ICTs as providing a solution to Jamaica's struggling education system, firstly by placing more computers in schools and then by enhancing current resources by utilising virtual resources. These solutions are attractive but, as currently proposed, may not live up to expectations. Our evidence suggested that merely placing computers in schools is not of itself necessarily of any great benefit. We interviewed school children and found that due to security fears, access was often occasional, and mainly provided to those high achieving children (often higher income children) who already had access to computers. In fact, despite official policy that requires students to access computer labs on a weekly basis, many students had not been granted access to the school computer lab in the past three months. Instead of providing universal access, use of computers could become simply an instrument of patronage and control within the school system. In short the benefits may not have warranted the expense.

The idea of `virtual' teaching (for example the re-broadcasting of exemplary lessons, through cable or Internet) also sounds promising given how teachers are stretched for time and resources. Many schools were also unable to purchase and obtain up-to-date materials and text-books. As currently outlined in the Universal Access Plan, however, the logistics of implementing a virtual teaching programme would require considerable (and we would argue unwarranted) expense. Much wealthier countries with the facilities to provide high-quality virtual teaching resources, on the whole do not use these facilities. We suspect this is because primary and secondary children generally require the

personal direction and attention, flexibility and comfort of actual teachers. The work of Sonia Livingstone and others (see web references) shows that educational benefits depends more on the larger context than simply the provision of machines. Looking at the international situation, the main success of virtual broadcast teaching is at the tertiary level with systems such as the Open University in the UK or the California State University, Sacramento. Given these experiences, we conclude that ICTs are actually better suited to other, more effective educational possibilities, such as adult education where motivation is less an issue.

Our research suggests that there is a huge opportunity to tailor the educational benefits of virtual teaching to the precise nature of Jamaican society. Economic instability, community violence and teenage pregnancy often contribute to the termination of education at or before the completion of secondary schooling. Although there is clear evidence that programmes such as the Women's Centre of Jamaica Foundation (WCJF) has made positive progress in keeping teenage girls in school (Economic and Social Survey 2003) and extended families in Jamaica often provide child care to facilitate a child's continued education, we found a that a large number of the women and men we interviewed terminated their education at 16. When they reach their late twenties to early thirties, many Jamaicans resume their interest in developing themselves and expanding their career possibilities. We witnessed a deep thirst for gaining qualifications and secure employment. Unfortunately this is long after they have left school and the educational system often without A-levels or other examination passes. Their only real prospects are with organisations such as HEART (the main government sponsored body responsible for supplying technical training to the post-secondary school population) and informal apprenticeships.

Clearly Jamaica cannot afford to have a second tier of expensive educational facilities equivalent to that provided for children. But there is an opportunity to increase the level of education of the Jamaican population generally by taking advantage the established interest and desires of adults. Many women in their late 20s and early 30s spend a considerable amount of time at home looking after children watching day time television. While much of this television viewing revolves around soap operas with little educational value, many women describe being interested in more educationally oriented programs (often foreign cable channels) and finding ways to become educated at this time in order to become self-sufficient. A fruitful use of this interest would therefore be to target much of the virtual teaching courses and programmes to these interested viewers who often have to re-take courses to pursue further studies in careers such as nursing.

In brief, Jamaica has a huge demand for skills training and general education at this post-educational level, quite beyond that of many other countries, and one that does not fit the global pattern of education as child centred. But this is precisely where virtual education could play a major role, since this is a highly motivated audience where education can be quite focused. A government sponsored expansion of education and skills training through both cable television and the Internet as a kind of popular or public `college' of adult education is the kind of ICT investment that fits the specific nature of Jamaican society and would transform the effective skills base of Jamaican society. Public broadcast education and training in areas such as the hospitality industry, basic literacy, typing, office procedures, IT skills such as the use of Microsoft Office, as well as general education could achieve a very large and committed audience. This population currently feels that, because they failed during their earlier education, they now have little hope of achieving the responsible and remunerative employment they now crave. We have spent countless hours in the homes of twenty and thirty year old Jamaicans who cannot afford to go on formal or residential courses, but are desperate for the education that they now recognise they failed to obtain when it was freely available to them. A successful investment in adult education would seem to us preferable to an unsuccessful investment in child education. Given the popularity and effectiveness of HEART, their training programme would clearly be the most effective location from which to organise such an effort.

With regard to child education we think there are other lessons to be learnt from observation of usage, in Jamaica and internationally. The modern personal computer is probably used for gaming more than for any other single purpose. Most of the high specifications that commercial computers come supplied with are present in order to achieve a better gaming experience. Much of the cost of these machines is therefore wasted from an educational perspective. We would suggest the government take a good look at the new machines (PIC or Personal Internet Communicator) being produced by AMD and recently introduced to the Caribbean market by Cable and Wireless as the MAX. In addition there is the new iMac and the Indian Simputer scheme. Although we have no direct experience of these machines, the literature indicates that one of their major advantages is that they are not particularly suited to gaming. By contrast, they claim to provide a full Internet access as well as the tools of Microsoft Office which are all that are required for educational purposes, without the

facility for gaming. Some of these machine are likely to be available at a cost of around $JA10,000 including software, that is a fraction of the cost of conventional computers. Also on the horizon are the plans by MIT's media lab to develop laptops for US$100.

But equally important as cheap provisioning is the attitude of teachers and the government to access and usage. We would contrast the conservative attitude to access found in Jamaica with the very liberal environment encountered in Trinidad (Miller and Slater 2000). We would argue that the distinction in attitudes may be just as important as income levels in explaining the much earlier and greater enthusiasm for the Internet in Trinidad. The emphasis on authoritarian discipline and censorship found in Jamaican schools may deflect the good intentions of the government and the teachers. One result of this authoritarian tradition is that Jamaican pupils talked of being denigrated and humiliated for poor performance, practices which discouraged experimentation and the desire to practice computing skills in public spaces. In Trinidad (in some cases) school children were allowed access to computer labs through the night, and work places allowed employees to use facilities for non-work purposes after hours. As a result, users of the Internet could be found even in the lowest income squatting areas. The more liberal regime we found in Trinidad and open access seemed to result in self-motivated use of the computer for educational purposes.[4] Peer focused experimentation in use of the Internet provides a model of self-education which may be of considerable benefit giving confidence that extends beyond the IT sector, but demands a more relaxed teaching regime.

Provision of Content

One of the most important qualities of the Internet continues to be that content is free and is global. A vast number of information and resources that governments had to pay to create for their own countries may in the future be simply downloaded from the Internet because they are public domain. The extent of developments, such as open-source architectures today even extending to areas such as encyclopaedias (e.g. Wikipedia), are becoming increasingly clear. The vast majority of educational materials for subjects such as science, maths, and do not raise particular issues of cultural specificity. Equally more advanced subjects such as geography (why do volcano's erupt), English (rules of when to use a semi-colon), economics, sociology or accounting) may also be unproblematic. Moreover, and although anthropologists tend to favour the preservation of local cultural material(s), Jamaicans expressed a strong desire and pride in the acquisition of international standards which they became very familiar with through the media as well as the direct experience of relatives and friends living in `foreign'. Presently, wealthier countries that can afford high production values are busy producing very high levels of educational resources, such as the vast amount of material being made available on-line through the BBC `bite-size' programme for educational revision purposes. Institutions such as UNESCO are also developing new forms of interactive software such as eNRICH. There is no reason whatsoever that a child in May Pen could not use this material as easily as a child in Liverpool UK. The Jamaican (and many other) government(s) may save a considerable amount of money by the international provision of high quality information sources. On the basis of our four country comparison funded by DFID, we will be approaching UNESCO and other international bodies in the hope of stimulating the production of such materials.

At the moment, however, the mainly unregulated system of access to Internet content is dominated by search engines which prioritise commercial rather than educational resources. An individual searching Google will pass first through pages of sites trying to sell products without any guides as to where to locate the quality informational resources. We would argue that it is these two realities of the modern Internet, (its global nature and the problem of accessing worthwhile content) that should guide the policy of the Jamaican government. In short, instead of expensively creating content, the government should inexpensively be directing people to the best quality content. This is why the dominant recommendations of this report revolve around various versions of what is termed `kitemarking'.

A kitemark is a formal recommendation or endorsement that can be used to influence consumers to favour particular resources. In our recommendations to DFID we will be suggesting that, in terms of ICTs, DFID should be involved in facilitating high quality educational resources for global rather than national consumption. The beauty of the Internet is that the very finest educational materials can be accessed and only need to be made once. Jamaicans can benefit both at the level of adult education, but also by access to material such as BBC `bite-size' that can be used to enhance classroom teaching. The role of the Jamaican government should be in issuing address lists which effectively guide Jamaicans to the most accurate and quality websites without wading through the lists produced by commercially influenced search engines.

There are evident difficulties in making the government responsible for formally favouring certain content over others. Initial discussion suggested the government would not itself want to be responsible for formally running a `national' portal and taking authority of actual web content. Our solution is to involve commercial companies such as Cable and Wireless, Digicel and the community of Jamaicans living abroad to mediate in this `kitemarking' programme so that government will not be held responsible for inappropriate material located on-line (see below). By favouring cheaper machines, recommending rather than making content, and tailoring virtual projects to those who would actually use them, we would argue very considerable amounts of money within the education sector can be saved and made more effective where spent.

Health Services

Many of the new proposals and initiatives for medical use of ICTs that are being developed around the world involve expensive high-tech equipment and services and do not come within the remit of our research. There are, however, many small scale initiatives that are possible in this sector. For example it has been realised that texting can transform the lives of the deaf and dumb giving them their first mobile communication. Cell phones can also be set to automatically remind people what medicines to take, when to take them. Equally, clinics could use text messaging to remind women when to return to the clinic for contraceptive injections and/or tablet. This may become particularly important in the management of the medical regimes required for the treatment of HIV/AIDS. Other initiatives involving cell phones might include improved links to taxi and other transport services during emergencies and the provision of emergency cell phone credit based on demonstrable medical need. In rural areas we found that the single biggest effect of cell phone on health provision has been the more efficient integration of phone and local taxi systems that cut the time involved in reaching medical services. The phone is also used by low income individuals in emergencies to obtain money or credit to help fill prescriptions. In conjunction with Western Union, this often involves obtaining small amounts of money from relatives in foreign to meet these unexpected expenditures. Lowering the cost for sending very small amounts of money would be particularly beneficial to low-income households.

Our key recommendation, however, is that health and welfare is a primary area for kitemarking. There are vast and informative websites dedicated to both simple and comprehensive medical information on every condition that exists. However, on many informal sites much of the information may be misleading or even false. The role of government is to issue clear guidance as to recommended sites and, by extension, direct people to those which have the appropriate level of information. Many of these sites are produced by governments and national medical authorities and there would be little risk in the Jamaican government directly endorsing such sites. The government seemed to feel that direct involvement in kitemarking sites that it had not produced could be seen as irresponsible. We would argue that to refuse to use its authority to help the Jamaican population find appropriate sites is rather more irresponsible. Given the preponderance of English language sites, the Internet represents a vast resource, but this needs to be focussed to suit the needs of the Jamaican public, such as access points for nurses, doctors and administrative staff at local clinics. We were particularly intrigued by the possibilities of phone based data transfer for medical information, and another of our recommendations to DFID will be the global provision of WAP, CHTML or similar phone centred simple information guides directed to low income individuals with limited educational experience. This would be complemented by their full Internet equivalent for use on computer based access Internet. Again, we feel that emphasising global production of information rather than local could save considerable sums of money for the Jamaican government, but it would be helpful to have clear government support for such a scheme.

Police and security

While most of our suggestions involve saving money, this is one sector where there should be strong encouragement to commercial institutions to spend money. The recent World Bank (2003) report on Jamaica was unusual in that it highlighted the impact of crime and violence on the Jamaican economy. Indeed it implied that this was one of the most significant problems in preventing future economic development. In our study we did not meet a single police man or woman who was not primarily using their own cell phone, at their own expense, in order to be able to undertake their work and in the rural site members of the constabulary force estimated that since the cell phone came to the area, crime has been reduced by 18%.

Rather than the Universal Access Fund becoming a generalized tax where the telecommunications sector does not see direct benefits from their specific expenditures, the police force (and other emergency services) stands out as one of several areas where direct investment by the telecommunication industry would be rewarded by obvious and clear benefits to the industry. Although a system would need to be found to ensure phones and credit were used for work rather than personal communication, the industry should be encouraged to directly supply the police and fire service with phones and credit. The telecommunications industry would then benefit with the rest of Jamaican commerce from the reduction in crime and the safeguarding of property from theft and fire.

There are also important potential collaborations in the future with regard to pinpointing location that may have benefits ranging from locating fisherman lost in storms to pinpointing criminals (GPRS systems). These arise out of the realisation that new technology permits the precise pinpointing of users, although any such developments would require careful scrutiny from the perspective of civil liberty. In our research we found that cell phones were already regarded as highly beneficial in terms of security, for example, in communication between parents and children, and providing communication that cannot be disabled by having wires cut by criminals.

E-Government

Clearly there are already many initiatives afoot organised through CITO and we see several major benefits to the continued development of e-government. At present much of Jamaica's bureaucracy is not just Kafkaesque but oppressive. Rural residents travelling to the capital Kingston for government services find they may have a wait of several days between being seen, often without even clear guidance as to how long the wait will be and/or the correct documents and information required to complete their business, even when they have phoned in advance to prepare for their journey and have pre-arranged contacts to more readily facilitate their engagement with the state. This leaves the average Jamaican confused and frustrated, ultimately resulting in disdain for the government. E-government often forces processes to become radically simplified, and their most important effect may be less the provision of on-line processes, but rather than simplification of off-line bureaucracy that now has to conform to the procedures that have been created for on-line usage. A marked success story has been the development of Paymaster and other schemes for paying bills, which suggest the potential for further on-line provision through Post Office services and other sites of public access. Our evidence suggests that land registration, while difficult, ought to be a priority in terms of the potential benefits to low income rural Jamaicans. This is one area, however, where government initiatives seem to be somewhat in advance of commercial initiatives and many of the complaints we encountered regarded the relatively slow pace of development within commercial banking and financial sectors. Of possible interest is a new scheme being developed in Mexico (Todito.com, see web references) that recognises the circle by which money is sent from foreign back to Jamaicans who then want to buy products in the country the money first came from e.g. US or UK. The Mexican scheme re-directs remittance money directly to the expenditure abroad.[5]

The community computer

While the government initiatives being developed by the Central Information and Technology Office are welcome, there are other government initiatives that appear to us more problematic. This document is written with the knowledge of the precarious state of Jamaican economy and the high ratio of debt repayments. We have therefore emphasised recommendations which save rather than spend money, even when this money comes in the form of loans. Currently the main influence on the direction of ICT investment are well meaning bodies such as aid agencies and NGOs who see an important role for ICTs in supporting what they call `community'. For example, a large part of the recent Inter-American-Bank Loan to the Jamaican government is to set up community computers and the same is true of the UNDP grant to the Jamaican government. Many millions of US dollars have been, or will be, dedicated to community computing. However, the emphasis on community centres for computing represents what we would call global rather than local thinking. The same recommendations may be found regardless of whether we are in Croatia or India. Aid agencies want to fund communities since it justifies expenditure as a social rather than individual benefit and because they want to encourage communities *per se*. But this may result in a tendency to see 'communities' as uncritically positive or useful sites for disseminating information and access to computing and to wish them into existence even when there is no evidence for them.

Our ethnography in the rural and urban sites found three forms of community. The first are the churches who are primarily involved in the support of schools and families. In our urban site in particular, a few churches have made strides towards the development of computer labs and training facilities. However positive these arenas may be for Jamaican youths and young adults, churches are ultimately viewed as exclusive rather than inclusive points of access, often requiring membership and acceptance of their beliefs before community members are allowed to use the computer facilities. Secondly, there are `community' events sponsored by local elites which serve the interests of those elites but rarely spark greater senses of community or access. In addition, there are very local neighbourhood communities, based on kinship in rural areas and locality (in Portmore, a dormitory suburb of Kingston, where we carried out fieldwork, these are called 'ends') in the urban areas where individuals rely upon others for child care, exchange of goods and favours. However, even in instances where the sense of family and 'neighbourliness' are heightened, there is little emphasis on sharing consumer items such as televisions, video players and computers. In fact, throughout our research residents of each locality suggested that if such a community facility was established it was most likely to be divisive, appropriated as a form of local patronage and the ideally free elements of provision somehow turned into a money making scheme. Furthermore, and as we report below, there was evidence that most Jamaicans possess a negative view of ICTs that must be shared and instead stressed the need for private ownership.

More importantly, we also observed that past provision of community computers to specific institutions, such as post offices and libraries, have been singularly ineffective in Jamaica. In fact, we found several Internet access points that were *never* used. Part of this has been a failure in past government-commercial partnership. We do not know the specificities of such agreements, but there is a popular belief that Cable and Wireless (along with other companies) agreed to supply access both to schools and centres in order to facilitate Internet use. But schools told us that such promises had either been reneged upon altogether (and often they didn't even have a landline let alone Internet). Other schools had been supplied but on the basis of standard commercial costs, which meant that access for students was almost impossible. One of the points we want to stress is that government commercial collaboration is often the best way forward, but it has to be based on strict and comprehensive agreements as to what exactly a company is committed to, otherwise one ends up with grand, apparently philanthropic gestures of little long term benefit. The commercial companies make claims for what they have accomplished in simply providing technologies but there is little research on whether they were appropriate and how they are used. The government should restrict its support and approval of commercial philanthropy to those cases that have carefully dovetailed to agreed programmes shows to be of value to low-income Jamaicans.

One response to the lack of a community basis for ICT development might be to suggest that the country would simply be better off following the cell phone model. What is needed is cheap access which will allow both private provision and cyber cafés, rather than government paid public access points. In short, the problem is best solved by the market, not the state. Once prices decline with the provision of a new cable and the associated competition more possibilities might arise**.** A more effective government intervention than establishing community computers might be a lending scheme that made possible business plans for micro house/veranda cyber cafés as already common in much lower income countries such as India. Such micro-lending schemes might follow projects as the Grameen model which has proved so successful as part of development in other countries. As with phone cards, there is considerable scope for the local appropriation of small scale money making opportunities if there is demand (for details see http://www.grameen-info.org/).

Can we assume demand?

Our assessment of ICT usage suggests that there may be a more fundamental issue at stake, especially when taken in comparison with other, much lower income countries in Africa and South Asia where Internet access can be found on almost every street corner. Given the size and wealth of the Jamaican population, the general failure to make use of Internet facilities in places such as libraries, post offices and cyber cafés is somewhat surprising. The cause may be entirely financial since many cyber café owners told us that given the current costs of gaining an IP address from Cable and Wireless there is simply no business plan for a cyber café that can really work at the present time. Similarly, most households don't feel private provision is worth the cost involved as long as Cable and Wireless retain timed charges in addition to flat rate for the low speed modem access of interest to low income households. But while all this may be true, we feel strongly it should

not preclude the consideration of alternative causes, of which the most important would be evidence for lack of demand.

The Jamaican government, and much of commerce, seems to retain an assumption that there is pent up demand for Internet access parallel to that of the telephone and that the only thing preventing a similar growth of the Internet is price. But the Internet is not the phone. The entire world, including the best businesses and management consultants made claims and predictions for years about the possibilities of the Internet. They were proven wrong by what came to be seen as the dot.con fiasco (Cassidy 2002, Woolgar 2003). Our evidence suggests that it is possible that one of the reasons for the relative lack of Internet use may be lack of demand, at least for Internet through the computer.

They way Jamaicans typically expressed their ambivalence to the Internet and cyber cafés generally fell into the following main categories:

(i) We Jamaicans do not like to share skills. Even when one individual has a computer, the tendency is to answer a request for information by looking up information ourselves and communicating the results rather than showing another individual how to obtain this information without our assistance.

(ii) We Jamaicans are an oral culture and prefer communication by voice. We are less inclined to textual and written information, so we would download music but don't like long text based communications.

(iii) Our education system is so bad that most kids can't read or write well, let alone type and use keyboards. Until that is sorted out any discussion of the Internet through the computer and low income persons is a waste of time.

(iv) We don't really live in households or families like other people. If a wife wants to market the fish her husband catches, she has to buy them from her husband. We transact as individuals not households, so we don't like machines that belong to the household. Because we prefer individual machines, and households can better afford computers than can individuals, therefore we buy less computers at low income levels.

(v) We are a very private people; we don't like computers that have shared access. Even if we are not using the communication to form relationships with other men/women we don't want people to know about, there are plenty of other reasons for keeping our business to ourselves.

There is not the time and space to comment in detail on the evidence for such claims. Some are derogatory, and clearly false. For example, most low income individuals operate `partner' schemes based on trust and social networks with considerable degrees of success. On the other hand research on an NGO sponsored free access cyber café in Portmore suggested that while it is possible to build up usage, even when access was free (short of the transportation to and from the site) it took considerable encouragement, education and time to build demand.

Our ethnography did support the suggestion of a strong preference for individual rather than household based access. We found, for example, that low income Jamaicans may be giving up landlines at a faster rate than suggested by official figures. Although most members of households argue that the dissolution of the land line saves money, we found that, on average, the combination of individual household members use of the cell phone resulted in a greater expenditure of money per household. We also concluded that cell phones are preferred because they relate to individually controlled budgets and the privacy of communication, especially when monthly post-paid bills can lead to household conflict. In general demand for the main Internet services such as email, chat and surfing did not seem to be equivalent to the level of demand for voice communication that led to cell phone saturation. We suspect it might be higher in middle class households.

There are two conclusions from this scepticism about demand that we want to address. First, we will briefly note here the implications for the potential of Internet through the phone compared to the computer. We then address the other implication, which is that if demand cannot be assumed, then measures may have to be taken to stimulate demand.

Internet through the phone

While we saw less demand for Internet through the computer than we expected, we saw much more interest in Internet through the phone. This was especially true for individuals considered low income. In the short time since the cell phone (affordably) emerged on the market, Jamaicans are making much more use of the general features of phones, such as in time keeping, music and diary than is common elsewhere. At present it seems a much more popular platform than the computer.

Government has generally been dismissive of this alternative given that it appears less amenable to educational and other welfare benefits. Our evidence suggests that it should be taken more seriously. Although the phone is too small and awkward for the kind of Internet material that has evolved for computers, there are many forms of simple data transfer and information towards which it can be adapted. Most foreign `experts' and business professionals come with a scepticism reflecting US or UK expectations, in Japan for example a recent study suggests that Internet access by young people today is more common through the phone than through the computer (Ito 2002). The investment in third generation phones is perhaps the biggest business investment in the history of the world and companies will be desperate to find and develop usage. It may be that a country such as Jamaica will be just as likely to appropriate such technologies as the countries such as Finland. In our recommendations to DFID we will be advocating a wide range of internationally sponsored creations of suitable material based on WAP or the Japanese CHTML. A more serious interest in data transfer through the phone rather than the computer might well turn out to be more effective and appropriate to the Jamaican situation.

Creation of demand – portal initiatives

One of the implications of this possible lack of demand is that government and commerce have a joint and complementary interest in stimulating demand for the Internet. Government's priority is to improve the IT skills and knowledge of the population and to address various welfare concerns such as education and medicine. Commerce also positively views improvement of IT skills but more generally sees demand as a source of profit from the expenditure that it stimulates. From our point of view we want to identify how government as well as commerce might effectively stimulate demand which we believe might enhance the welfare of low income Jamaicans.

For this purpose we recommend that to the government assist in the development of a national scheme that uses portals and other genres to direct the public to those on-line facilities that will be most helpful, relevant and attractive to them. Much of this depends upon kitemarking. In earlier conversations with government ministers, there was concern that the government might be seen as favouring or leading the public to sites that subsequently turn out to be problematic; the government in Jamaica can hardly be expected to keep up with the content of web sites that are being created all over the world. For this reason there needs to be some mediation that makes kitemarking, portals and similar schemes the responsibility of commercial or other organisations that have only semi-detached linkages with government itself. Each section of this endeavour is issued as a licence to those engaged in the activity. For example Digicel might choose to run the commercial link-up, Cable and Wireless the home portal radio, while a Jamaican based at a Canadian University might be given the rights to run a medical service or other informational service.

If the results prove highly problematic, then the licence can be granted to a rival body at the time of licence renewal. At the moment, we see three main bodies able to construct this demand. It is quite possible that companies such as Digicel and Cable and Wireless are most likely to find such a proposal more attractive when it is considered as a Caribbean rather than a Jamaican national portal. Although the premises remain, this would then require some adjustments from our proposal.

Secondly we think there is a huge and currently untapped resource present in the Jamaican diaspora. Jamaicans living abroad often have more affordable access to computers and Internet. Moreover, and given the large amounts of remittances sent to Jamaica, many Jamaicans living abroad hold a stake in Jamaica's development and seek out ways to support and assist Jamaica's development (Cf. Thomas-Hope 1999). Presently much of the on-line work is dominated by the altruistic activity of these Jamaicans, such as *Top5Jamaica.com*, which was produced by a Jamaican originally from a MSC programme at the University of the West Indies now based in Canada. Until advertising made Top5 a self-paying proposition, the website was simply created of an altruistic desire for a comprehensive Jamaican portal. If marketed sensibly, many of the functions outlined in the portal might be taken up by Jamaicans abroad, especially if they are thereby given official government approval which might be particularly effective for those aspects of the portal that do not

have sufficient income producing potential to interest commerce (e.g. health). ICTs thereby have considerable potential to reverse the Jamaican `brain drain'.

In addition to encouraging a public-private partnership to stimulate interest in the Internet, there is much that can be done in terms of marketing the portal as a potentially vital element of Jamaican life. In the first instance we suggest that stimulation of demand should be based on the concept of `edutainment' where entertainment and education are integrally tied together. In the Appendix, we list a series of potential on-line structures and initiatives. We recognise that many of them may never come to be but we take this as an opportunity to think through the range of possibilities that do exist. As discussed above, the optimal operation would involve a government body bundling these portals and licensing them out to groups such as commercial companies, Jamaicans abroad or semi-governmental bodies, who are then allowed to run them on a for-profit basis. The government would be responsible for coordinating the kitemarking aspects of these schemes.

Conclusion

This report is based on a year living with and amongst low-income Jamaicans. Our primary concern is to reflect the welfare of those populations as they were communicated to us. At present we have only recently finished our fieldwork. In the future we will be working more systematically to compare our results with of the research of our colleagues in Ghana, India and South Africa. It is entirely possible that we will change our opinions, or come up with new suggestions as a result of subsequent analysis. We recognise that what we have recommended is a mixture of immediate and more long-term, speculative advice covering a much broader range of issues than those in which we can claim expertise. If, however, this document is found useful, we would welcome written responses. When we approach bodies such as UNESCO and DFID we should like to be able to say which government and commercial organisations in Jamaica found which of these recommendations useful and worth supporting. Criticisms are, of course, always welcome to academics.

Notes

1. Although the project is funded by DFID the suggestions and remarks are our own, and do not implicate DFID in any way.
2. Low income was defined as an income of less than $JA 3000 weekly in the rural location and less than $5000 weekly in the urban location.
3. Unlike most independent advisors and NGO's, our main concern was how to save the government money and we have tried to come up with suggestions that on balance would reduce expenditure rather than increase it, with the assumption that such suggestions would be more likely to be implemented.
4. The issue of pornography is complex. Jamaica has a problem with school age sexual activity even with an unusually strict level of censorship, so this cannot be seen as an outcome of exposure to pornography. It is likely that Jamaica will follow most countries in that initial use of the Internet will be heavily orientated to pornography. But in general this dominance fades as other possibilities of usage come to the fore. It will, in any case, be hard for Jamaica to remain cut off from the more liberal regimes that generally hold for pornography in metropolitan countries as ICT usage spreads.
5. Although from the point of view of government tax receipts this may not be of benefit.

On-line References

http://www.children-go-online.net/ - *Personal website of Prof. Sonia Livingstone, expert on children's use of new media, based at London School of Economics*

http://www.becta.org.uk/ - *Studies of educational use of new media in UK*

http://www.bbc.co.uk/schools/gcsebitesize/ - *Examples of educational revision materials*

http://www.digitaldividend.org/case/case.htm - *The WRI (World Resources Institute, Digital Dividend series – What Works) Extensive survey of ICT projects in different sectors such as health and agricultural development*

http://www.digitaldividend.org/pubs/pubs_06_todito_epaid.htm - *Todito.com and ePAID: Innovative Remittance and e-Commerce Services. Reported as a WRI case study*

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Appendix 1:

JAMAICA LINK UP

The Jamaican resource for the reliable information
On the World Wide Web

□	Education Link Up	Information Link Up	¡
$	Commercial Link Up	Spiritual Link Up	†
♥	Soap Link Up	E-government Link Up	₪
∞	Third Age Link Up	Communication Link Up	☺
♂	Medical Link Up	Yard Link Up	

J *signifies that the website has been approved by the Jamaica National Portal Association*

… Listen to us on WRJA-103.5 FM …

J JAMAICA LINK UP

In this model, Jamaica Link Up would be based upon a web-cast radio which would also be available as conventional radio. The radio programme effectively coordinates the activities of the entire portal, alerting people to events, such as interactive sessions that are current at some or other part of the system. This is the model we have used to organise the sections listed below. Much of this is viewed as evolving over twenty or thirty years and this list is endless. While we have confined our list of possibilities to 11 basic categories, it is easy to imagine other sections, such as for food or dating and marriage. It is likely that the basic portal would begin with either those categories that have commercial potential sponsored by companies, or those managed altruistically by Jamaicans living abroad. Others may or may not develop over longer periods of time. Another factor will be whether international material is being produced for both computer and phone based access that gives a corpus of standardised educational and informational content. This will form a major part of our report back to DFID.

♫ SITE 1: HOME-PAGE RADIO

Live broadcast web-radio also available as radio programme. This needs commercial 'hype' to be launched with top name DJ's such as Sean Paul, Vybes Kartel, Elephant Man or Lady Saw. It should provide constant entertainment, but with continual reference to advertising other events and the website. For example: 'Link up with DJ Remy at four o'clock for an interactive session on learning Microsoft Word' or 'all you returnees and retirees cooling out in the garden can chat with Miss Lou in Toronto at 5.00'. From the home-page links on the website, and oral links on the home-page radio keep sending people to further sections. Facilities from the home page might also include:

(i) Music Link Up - Free downloads for new Jamaican music, from gospel to dancehall. Instructions concerning how to obtain music on-line.
(ii) Sports Link Up - Dates on local league games. Debates about Reggae Boyz. Netball, cricket and other sports.
(iii) Horoscope Link Up - Tell people about your dreams. Interpreting other's dreams (with potential link to cash pot and lotto) and post your own.
(iv) Party Link Up - What is happening and where? Who will be there? What will they be wearing? Fashion highs and lows.

□ SITE 2:EDUCATIONAL LINK UP

Much of the material for Educational Link Up can be taken from international sites (e.g. BBC bite-size interactive –see website references) have simple revision tests on the school curriculum made into fun and engaging entertainment for school children. One part of this section might involve interactive Sessions with authors of CXC guides. A considerable amount of content might also include skills training for adult education, possibly linked to an entire cable TV channel devoted to this purpose similar to the current government proposals for child education. Teaching could include components such as:

(i) Microsoft Office Sub-section, interactive learning with sponsorship from Microsoft.
(ii) Expansion of current Cable and Wireless school websites.
(iii) Co-ordination of national alumni lists.
(iv) Producing your own CV.
(v) Link up with TV School Challenge Quiz, archive of answers.
(vi) Link up Gleaner Youth Link.
(vii) Link up other TV youth programmes.
(viii) Information on educational courses abroad.
(ix) On-Line foreign courses as distance learning, taken within Jamaica.
(x) Links to University of the West Indies, University of Technology and Northern Caribbean University.
(xi) Links to HEART.

¡ **SITE 3: INFORMATION LINK UP**

Information Link Up can be construed as an expansion of the current Jamaica Information Service website. It would also involve a government `kitemark' of approved sources of information. This could include:

(i) Government services and JIS news and programming.
(ii) Warning against scams and spam on line.
(iii) Local Travelocity i.e. news reviews hotels, CDs stores etc.
(iv) 'Kitemarked' recommended sites such as on-line encyclopaedias.
(v) Basic information including weather forecast, currency exchange, local facilities.
(vi) Jamaican statistics hosted by STATIN.
(vii) Link up for go-local sites for each area.

$ **SITE 4: COMMERCIAL LINK UP**

Commercial Link Up would involve a government-approved scheme for on-line payments either through credit card or through a modified version of Paymaster. It could take advantage of the following facilities:

(i) House sales and exchange.
(ii) Car sales and exchange.
(iii) Virtual mall for general goods and on line shopping
(iv) E-bay style local exchange and sale second hand goods.
(v) Agricultural prices in local markets.
(vi) Specialist markets for fishing, craft and local produce.
(vii) Check fares for transport e.g. airlines, travel between Kingston and Lucea.
(viii) Financial advice and services.
(ix) Pensions.
(x) Insurance.
(xi) Find your own `partners' scheme.

† **SITE 5: SPIRITUAL LINK UP**

Spiritual Link Up extends the current work of Love 101 and Love TV to make religious material available on interactive basis with:

(i) Ask the Pastor section.
(ii) Link to individual church web-sites, events, missions.
(iii) Information on groups e.g. Moravian, Rastafarian, Jehovah's Witness, Revival.
(iv) Section for posting personal testimonies.
(v) International links to theological sources.
(vi) Christian dating service, find partner in faith.
(vii) Similar services for Rastafarians and others.
(viii) Find a church in London, NY, Atlanta, Toronto and Miami.

♥ **SITE 6: SOAP LINK UP**

In the beginning Soap Link Up might start with connections to locally produced Royal Palm Estate. However, it would be ideal if this section evolved into a web-cast soap opera, which included educational stories, based on internationally exported radio soaps following `Archers' model (that is general narrative story but with government and educational messages built into story lines). Soap operas could incorporate excitement and melodrama but also deal with difficult topics, such as when a relative is HIV positive, or involved in gun crime, and common parenting issues, such as underage sex and pregnancy, effect of migration on family, youth unemployment etc. In addition, it could incorporate:

(i) An archive of episodes.
(ii) Discussion groups around popular soaps and difficult issues.
(iii) Soap trivia.
(iv) Special promotions to speak to and/or meet local actors and actresses forming in the soaps.

₪ SITE 7: E- GOVERNMENT LINK UP

E-government link up makes available most of the standard government forms and processes as on-line and follows the current proposals from CITO. It would incorporate:

(i) Advice on form filling and how to submit.
(ii) How to make payments on-line.
(iii) Office of Utilities Regulation.
(iv) Standards and consumer rights.
(v) Prices for services, guide to commercial prices.
(vi) Links to range of CITO based projects such as tax forms, customs forms, export and import regulations, and in the future land registration and other services

∞ SITE 8: THIRD AGE LINK UP

The Internet could well end up being rather more important to the elderly than to youth, if adapted to their needs and encouragement given. Current trends reflect commercial push to the youth market and differential take up of innovation by youth. But considered abstractly it is the elderly who might benefit more, especially when lacking mobility. Given this, a Third Age Link Up would involve:

(i) Formats to keep in touch with family home and abroad.
(ii) Instructions concerning how to send and receive family photos.
(iii) Activities for retired people.
(iv) Special facilities and large font sites, easy point and click features for those who need these.
(v) Old time stories. Miss Lou and folk tales.
(vi) Returned Migrant organisations and concerns.
(vii) Discounts on medicines and other facilities for elderly.
(viii) NHF, PATH and long term care.
(ix) Accessing your rights: What to do if your pension has not arrived.

☺SITE 9: COMMUNICATION LINK UP

This is main connection to other communication and bridges Internet, television, cell phone, radio and other media. Communication link up would most logically be run by one of the current cellphone operators. Features of Communication Link Up might include:

(i) Establish your Internet connection through the phone.
(ii) Link up to the cell phone companies.
(iii) Link up to ISP's and Internet providers.
(iv) Local MSM style chat Jamaica.
(v) Link up to television, programmes and interactive chat about contents.
(vi) Link up radio archives and other services.
(vii) Link up newspapers archives and other services.
(viii) Jobs available in media

♂ SITE 10: MEDICAL LINK UP

Medical Link Up provides on-line medical advice. These could be based upon UK NHS direct service, United healthcare websites or similar government kitemarked advice areas. We envision Medical Link Up to include:

(i) Basic information on medical conditions.
(ii) Kitemarked links to approved details of prognosis and treatment.
(iii) Daily `ask the doctor' interactive sessions, potentially in conjunction with call-in radio programs.

(iv) 'Sugar', 'pressure' and other medical conditions
(v) AIDS link up for patients.
(vi) AIDS link up for information on prevention and diagnosis.
(vii) Rasta medicine and treatments.
(viii) Post your own natural medicines and advice guide, testimonials.
(ix) Medical professionals interchange.
(x) Jobs available in medical services and how to become a nurse practitioner.

SITE 11: YARD LINK UP

This section focuses upon maintaining the links between Jamaicans living abroad and in Jamaica:

(i) Find local Jamaicans.
(ii) How can you participate in Link-Up help create and maintain sites.
(iii) Sending remittances – new schemes.
(iv) Sending a barrel and other services to Jamaica.
(v) Good causes in Jamaica seek your help.
(vi) The grass isn't always greener abroad testimonials. Migration advice.
(vii) Pen friends and virtual friends abroad.
(viii) Dating and marriage, the international guide.
(ix) Returning home.

Appendix 10: ISRG Working Paper 3

ISRG

Information Society Research Group
Working Paper No. 3

Finding a Voice:
The Potential of Creative ICT Literacy and Voice in Community Multimedia Centres in South Asia

Jo Tacchi

May 2005

LSE

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Information Society Research Group (ISRG)

ISRG is a UK Department for International Development (DFID) funded university consortium that comprises University College London, Queensland University of Technology, The London School of Economics and The University of Adelaide. The research group draws together institutions and researchers with an interest in producing qualitative insights into the digital divide and processes of communications for development.

Working Paper Series

The working paper series provides a forum for emerging analysis to be rapidly disseminated through various electronic resources, such as ISRG's own website www.isrg.info and through sites such as Eldis, ID21, The Communications Initiative and DFID's i-connect online.

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Finding a Voice: The Potential of Creative ICT Literacy and Voice in Community Multimedia Centres in South Asia[1]

Abstract / This paper considers the potential of community multimedia centres to support and promote creative ICT literacy and voice. It does so through presenting comparative research findings from eight ICT centres in South Asia. The research uses a methodology that combines ethnographic approaches with action research. Here I look at instances of 'ordinary' people gaining access to media and ICTs, to create their own local content. As such it describes to some extent the processes of 'metamorphosis' involved in 'citizen's media' participants becoming, through these activities, 'active citizens' (Rodriguez 2004). At a point in time when alternative media studies are finding a new relevance and with development communication research facing a crisis in direction, this paper considers research findings emerging from and utilised in community based ICT initiatives across South Asia.

Keywords / community-based media, local content, voice, creative ICT literacy, South Asia.

Introduction

Contemporary development and globalisation discourse positions information, communication and technology at the vanguard of social and economic inclusion (Castells 1996; ECOSOC 2000; UNDP 2001). However, the assumption that access to information communication technologies (ICTs) may bring benefits to the excluded is primarily based on the perceived socio-economic benefits of ICT proliferation and use in developed, rather than developing, contexts (Golding 2000; Panos 1998). There is evidence that new and dynamic articulations of information and communication technologies are emerging in developing countries (UNESCO 2002) but it is unclear how much potential they have for empowerment and participation.

While this proliferation of new technologies offers at least the theoretical possibility of access to and participation in a 'global commons' (Silverstone 2002), access to new technologies does not automatically equate to the active participation that is a precondition of 'voice'. In social theory 'voice' (inclusion and participation in social, political and economic processes, meaning making, autonomy and expression) is central to development (Drèze and Sen 2002, Sen 2000). But in media and communication studies, technological determinism and first world biases mean little of this social theory has been applied (Mansell 2002). Development theory and practice has long recognised the importance of social context, communication and participation in facilitating poor and marginalised people to realise a broad range of human rights – to development, education, health and wellbeing (Servaes 1999). Voicing their needs is now seen as fundamental to most processes of human development (Chambers 1995; de Haan 1999; Gardner & Lewis 1996). The rapid emergence and new articulations of ICTs in marginalised communities, especially through government or NGO activities, reveals a critical need to apply participatory methods to questions of use, and analysis of the implications and impacts of such interventions. In particular, and within such interventions, this paper argues that there is a need to understand and develop culturally appropriate interfaces for local content creation if there is to be a meaningful uptake of ICTs in developing countries.

There remains an assumption by governments that simply by introducing technology to disadvantaged communities the 'digital divide' will be removed and people will go online (Pal 2002). Media literacy skills involve both knowledge of new technologies and the skills to assess the value and reliability of information and perspectives (Mansell 2002, Slater and Tacchi 2004). Many internet-based information services are limited to one-way communication, despite the interactive potential of the medium – they offer little to the majority of citizens to contribute to information and democratic networks and little in terms of providing people with choices based upon their own knowledge systems (Mansell 2002). Mitra and Watts (2002) define one of the central themes for communications scholars in a globalised world as the 'resuscitation of voice'.

'Digital inclusion' is increasingly measured, not by computer or internet access, but by technological fluency and multimedia content creation – 'multimedia literacy' is especially important because of the ways in which the 'social practices of text literacy' have marginalised groups 'whose traditional methods of learning focus on shared storytelling using audiovisual elements such as song, chanting and dance' (Warchauer, 2003: 115-116). It is important to re-examine our ideas about 'computer literacy' in this context: terms like *creative ICT literacy* are necessary to describe the ability to create and manipulate multimedia content in ways that serve vernacular interests and enable relatively autonomous cultural participation.

In this paper I examine the notion of creative ICT literacy and voice through comparative research across a network of community multimedia centres in South Asia. These centres are supported (though not established) by UNESCO and have development objectives. First I describe the network and the methodology and briefly introduce some of the local projects within the network. I then discuss ideas of voice, local content and creativity in more detail. The main section of the paper presents findings from the South Asian research, indicating the potential of community multimedia centres and of media technologies for creative expression and the promotion of voice. These findings emerge from research in and about interventions that take place within a development paradigm that is working towards social change.

Introduction to ictPR

In mid 2002 UNESCO's Bureau for Communication and Information (Asia-Pacific) put out a call for organisations working in South Asia to submit proposals for innovative applications of ICTs for poverty reduction. UNESCO's aim was to support their work through the provision of ICTs and to research each of them in order to answer some basic questions about the usefulness of new technologies for development. Can ICTs help to reduce poverty, and if so, how? In what circumstances and in what ways? The project is called 'ictPR'. Nine local initiatives were supported and work began in late 2002 – there are 5 in India and one each in Bangladesh, Sri Lanka, Nepal and Bhutan. While they all have a different organisational structure, each has the involvement of at least one locally active NGO. Some were existing development projects that through this opportunity added ICT components, while others developed because of the UNESCO support. Out of the nine project sites, eight of them have been contributing research data to a centralised research website for over two years.[2] Each local initiative has a local researcher who has been trained in ethnographic action research (Tacchi et al 2003). This is a methodology that takes an ethnographic approach - through the use of methods such as participant observation, in-depth interviews and the writing of field notes – to action research where research is fed into development of local initiatives in a cycle of *plan, do, reflect*. Ethnographic action research is therefore a methodology that combines research with project development. It has been designed particularly for ICT for development projects.

A basic principle of ethnographic action research is that in order to understand the potential and real impacts of individual ICTs in any given situation, you need to place this experience within a broader understanding of the ways in which communication and access to, and the use of, information is structured in people's lives. Each instance of communication or information-use takes place within an already existing 'communicative ecology', and each place has its own unique communicative ecology. Using ethnographic methods, researchers working in each ICT project conduct research within an holistic framework, trying to understand their project, and improve it, according to a good understanding of the wider contexts in which they work.

The research has proved important for individual project development locally and at the same time comparison of research across the sites has helped us to learn from each other's experiences. More than this, the process of training all the researchers in the same methodology, and storing and discussing research data in a centralised location has given us the opportunity to compare and contrast research, and develop significant insights into the potential role of ICTs in poverty reduction. These insights are based on data from across the sites which use a range of media mixes, approaches, resources and organisational structures. Indeed, the implementation of the methodology has varied across projects, with some spending considerable time conducting research prior to the intervention, and others taking a far more action research approach, testing and adapting (experimenting) through the implementation of the project and project development methodology at the same time.

All of the ictPR initiatives combine and link social and technical resources in different ways, often in response to the knowledge and resources available to their organisation and in an attempt to respond to the needs of their target communities. The ictPR initiatives encompass a wide range of technical, social and organisational combinations that have allowed us to investigate some of the different directions that community ICTs can take, as well as the ways in which different media and media mixes can be related to poverty reduction. To demonstrate the range of applications of ICTs, here I briefly describe just five of the initiatives:

Nabanna: Networking Rural Women and Knowledge (Baduria, North 24 Parganas District, West Bengal, India) uses grassroots processes to build information-sharing networks among low-income, rural women. Networking is done face-to-face and through web- and print-based mechanisms, linking women and their groups from different parts of the municipality.

Namma Dhwani Local ICT Network (Budikote, Kolar District, Karnataka, India) combines a radio studio, an audio cable network that delivers radio to local households, and a telecentre with computers and other multimedia tools. It is run by and centered on a network of women's self-help groups (SHG) and linked to a local development resource centre. Radio programming addresses local information and communication needs, drawing on productions by local volunteers as well as a variety of multimedia resources, like websites and CD-ROMs.

Tansen Community Media Centre (Tansen, Palpa District, Nepal) works with local youth from poor families and traditionally marginalised caste groups, training them in audio-visual production and computer and internet skills. The centre is made up of a digital production studio and a computer/internet access centre and is linked to a local cable TV network. Participants' audio and audio-visual programming is aired on the cable TV network and local community radio stations.

Uva Community Multimedia Network (Uva Province, Sri Lanka) uses a combination of radio and new technologies as a way to facilitate responsive development and governance on a province-wide basis. A series of community multimedia centres, combining FM radio and telecentre facilities, have been established alongside a series of grassroots 'knowledge societies'.

ICT Learning Centre for Women (Seelampur, New Delhi, India) is an open learning centre for girls and women located at an inner-city madarsa (Islamic school) in a high-density, low-income area of New Delhi. A range of interactive multimedia content has been developed and used to support vocational and life-skills training and to build awareness of health issues and livelihood opportunities.

UNESCO has supplied all nine initiatives with computers, with each group securing internet access. Each of these local initiatives is now at least two years old. While some have integrated internet use into their work, others are just beginning or struggling with this process due to connectivity or other technical challenges. All of the sites were also supplied with digital cameras, multifunction printers (including scanner and basic photocopy facilities) and digital pen drives, and in some cases webcams and microphones by UNESCO.

Research shows that the process of linking technical and social networks can only be developed at a local level, as different locations, communities and technologies interact with each other in different and often unpredictable ways – what works and is appropriate in one place will not transfer automatically to another. Local researchers have been conducting research within a conceptual framework that recognises that each location has its own, unique communicative ecology. That is, each local use of a media technology takes place in complex information and communication environments, in which they are linked to other media and social and cultural networks that need to be understood if particular instances of use are to be analysed and learnt from. In ictPR research, computers are considered both in relation to the other media resources available within the projects (radio, video, newsletters, digital photography), to the existing communicative ecology (the channels and flows of information and communications that already exist and which the intervention seeks to impact upon) and to existing and developing social networks. Researchers have studied communicative activities such as face-to-face communication, the consumption of mainstream television, film, radio, and the use of telephones and postal services as they have tried to understand the ways in which their particular ICT interventions might work in their local contexts.

Furthermore, the project takes a 'subjective approach' to poverty, rather than an objective one (Nyaki Adeya 2002). This approach is in line with participatory poverty assessment approaches which seek to understand the perspectives of those we are engaging with in order to understand what poverty or being poor means in this place, and thus how the ICT initiative can address some of these issues. Gaining this type of understanding of locally specific definitions of poverty has been a central concern of the research.

Initial comparative research findings have been published (Slater and Tacchi 2004) which demonstrate the promise of promoting local voices and developing multimedia formats for local content creation as well as the tensions, power struggles and challenges such activities can create locally. I will explore those tensions, power struggles and challenges in detail elsewhere. In this paper I concentrate on issues of voice, local content and creativity which I argue can be understood both at an everyday level of media literacy, engagement and entertainment, and as a tool for social change.

Voice, Local Content and creativity

Most ICT initiatives in developing countries provide access to other people's knowledge and perspectives, that is, content produced elsewhere (UNESCO 2004). Strengthening participation in content creation constitutes a priority in developing countries where the introduction of new technologies can increase, rather than reduce, inequality (Rodriguez and Wilson 1999, UNDP 2001). Mansell (2002) emphasises our lack of understanding about the impacts of new media technologies in the context of developing nations, which in part is a consequence of the priority given to the promotion of ICT diffusion in pursuit of more diverse access. This is tied closely with assumptions about what access will do in terms of empowering those who are disadvantaged (Selwyn 2004). There has been little debate regarding the developments of new media and an examination of alternatives 'that are consistent with a goal of empowering the majority of citizens in their interactions with the new media' (Mansell:408). Instead, Mansell believes that digital divide debates, which have dominated ICT policy agendas, have overemphasised macro-level issues of technology access and social exclusion rather than micro-issues of the capabilities people require to function in a society where internet-based communication interactions are increasingly favoured. Issues of new media literacies and technology innovation at the micro level have been swept aside in the global ICT agenda. The concept of the 'digital divide' (which simply describes the access or lack of access to computers and digital information) is less useful than 'digital inequality' (DiMaggio and Hargittai 2001; Selwyn 2004) or 'digital inclusion' as a way of describing the relationships between ICTs, cultural agency, and social contexts.

Mitra and Watts (2002) see new technologies as offering a chance to examine how marginalised groups can correct some of the biases inherent in traditional media's structures of 'speaking power'. But alternative media research is not new and indeed its salience to the broad agenda of media and communications research is claimed to be growing (Atton and Couldry 2003). New social movements, power, and empowerment are foci for both alternative media research and development communication studies. Robert Huesca (2001) suggests that development communication as a field of research is facing a 'critical juncture'. Changing political, economic and social contexts along with advances in communication technologies have 'questioned the pertinence of development communication theory and practice' (*ibid.:* 415). He feels that research on 'new social movements' could make a significant contribution to development communication research which is in need of directions for conceptual advancement. In the special issue of *Media, Culture and Society* (edited by Atton and Couldry 2003) contributors identify the importance of considering the community context of alternative media and the need to include this in our studies (Gillett 2003), and key, unanswered, questions for alternative media (Downing 2003) – which include questions about the links between alternative media and political practice or empowerment. Alternative or 'citizens' media 'articulates the metamorphic transformation of alternative media participants … into active citizens' (Rodriguez 2004). In this way, citizens' media 'is a concept that accounts for the processes of empowerment, conscientisation, and fragmentation of power that result when men, women, and youth gain access to and re-claim their own media' (ibid.). In this process, media is used to 're-constitute their own cultural codes to name the world in their own terms' and to 'disrupt power relationships, exercise their own agency, and re-constitute their own lives, futures, and cultures' (ibid). This, however, depends on who has the power – economic, political, and social – to capture and use citizens' media, so that there is a need for a power critique of what constitutes this medium, what facilitates or denies access.

Finding a voice – lessons from ictPR

The ictPR research demonstrates the need to identify and nurture the innovative, adventurous and pleasurable ways in which participants explore the possibilities of media and media mixes – especially in terms of local content creation. Rather than simply understanding these technologies as tools for accessing and circulating useful information, participants engaged with them in far more complex and creative ways, mixing information and entertainment, the learning of skills as a pleasurable activity in its own right and skills as a means of directly changing their circumstances. In some cases this has led to social tensions and fissures – who has the power, and who is given the power, to access and use ICTs is clearly significant in our understanding of the ways in which these ICTs can be used for social change. Furthermore, in some cases individual or group circumstances could be seen to have changed because of their *associations* with the technologies rather than through actual uses of them. Such examples will be discussed elsewhere; here I will consider some examples of what I mean by creative engagement.

The short digital film, *Sonali Tantu*, was created by some women in the Nabanna project. The women got the idea from the visit of one of the research coordinators, who had brought with her a video camera and a camera operator to make a short film about the research methodology. Shortly

afterwards, the Nabanna project workers were approached by the women who asked if they could make a film, just as their visitors had done:

> As usual I was conducting a group discussion, more of an informal chat really, with some of the [women] on the various steps of jute processing. This lead to an idea of a movie on the various steps. As they have seen us using the digital [still] camera before, they asked me how to go about it… The things that came to my mind first are how efficient this camera is to make a film. It has a very little [memory] space and is without sound. Therefore, we have to record the voiceover separately. The quality of the sound recorder is bad. However, their enthusiasm encouraged me to try to give their idea a proper shape. I [wanted them to make the film themselves] therefore I asked them to do the whole thing.
>
> *Extract from Nabanna Researcher's notes on the film making process*

This interest in self expression and experimentation developed through the use of media mixes and has led project workers as well as participants to develop new skills. In this way we can see that basic skills development can be achieved effectively through creative engagement with media technologies. Additionally, and importantly, the level of media literacy that is developed through such exercises is significant. Participants learn how to create media content, and in the process, they learn how the media content they otherwise consume is created.

In Seelampur, within its first few weeks of operation, there was a strong demand from participants to explore technologies that they had only recently encountered. The project workers showed the women a series of CD ROMs that they had made covering tailoring, candle making and other activities. The intention had been to encourage the women themselves to make clothing or candles, but instead the women asked if they could make a CD ROM:

> The participants will be using movie-camera for filming practical lessons the community will deliver at the ICT Centre… The community's desire emerged during the process of participative demos I have been holding in the Community for past several weeks. The women kept on observing me and my demos for several days. They became very curious and inquisitive about the digital camera constantly with me and they thought filming and CD production which I outlined was not so difficult for them to handle. They asked me 'Madam, can we make film also? Can we handle the camera?' At this stage, I encouraged them to make the film and start handling the camera themselves which generated tremendous excitement.
> *Extract from Seelampur Researcher's notes*

These experiences are both powerful and pleasurable in their own right. Skills are developed to engage with prestige technologies and it facilitates group learning. They foster project-based (rather than formal and theoretical) engagement with technologies, in which skills are learned in the process of achieving a product that is interesting and relevant to the participants. It also develops the conditions for using these tools to document the participant's community and use them to intervene in it socially and politically.

Both of the above examples of content creation have taken place in sites that concentrate largely on computer and internet (and print media in the case of Nabanna). These content creating activities emerged directly from the needs and desires of participants in the initiatives, rather than project workers. This demonstrates an opportunity to develop approaches to these new technologies that can tap into local creativity and the desire for self expression that might allow users to explore new technologies on their own terms. Other sites within the ictPR project have access to radio and television. Here, local content-making is a central component of the projects, and the 'broadcasting' of the content brings an interesting and powerful additional element.

> In Namma Dhwani we have seen how women have found their voices, and how this has positively impacted on their personal and social identity.
> In terms of programming an outstanding example would be Meena herself. From being an almost mute woman to have found her own identity as studio manager is an exemplary case study … same with the volunteers:
> Devi, one of the most brilliant and composed volunteers from the neighbouring village learnt a song from our music Library, for a district level music competition and won it!
> Padma: one of the committee members had made a programme about her own self improvement after joining her Sangha. This programme has been re-played about 6 times out of popular demand. She has become a celebrity of sorts and of late she was telling me that she has lost count of the number of people who have complimented her on her "confidence and ease while speaking" on ND.

> Also, I think like all community radio stations over the world, hearing one's own voice is a boost to one's own morale and confidence. I have seen how volunteers fumble, loose their voice, stammer and stutter to becoming articulate people who smile and enjoy their moment of glory in front of the mic.
> *Notes from Namma Dhwani researcher*

In Tansen, where training young people in ICT skills is envisioned as a route to empowering youth as agents of social change, media content has been made that explores social issues such as the environment.

> We have finished our basic course in computer so nowadays I and all my friends are planning to make a programme about the problems and solutions of plastic bags to make this programme, we (our group) had a discussion for about half an hour. After the discussion, we made up our mind to set the programme and decided who is going to be cameraman, narrator, script writer and editor. In this way we divided the different responsibilities to all of us. At 4.00 PM, we went for the video recording. We visited almost all the bazaars in Tansen and took video related to polythene bags. We took interview with different sellers and people walking in the street. We asked them about the advantages and disadvantages of polythene bags. When we finished our video recording and interview, we came back to CMC and took a rest for few minutes. At the same time Mahesh sir and Anil sir brought a TV to watch the video recordings that we had made. We watched the recordings for half an hour and then discussed about it.
> *From Tansen participant's diary*

In all of the projects, the desire from participants to generate local content emerged almost from the start, and project staff responded to them, sometimes reorganising much of their programme to do so. While participants' sense of the relevance of and their interest in computers and the internet was often talked about in very pragmatic ways – in order to even be considered for an office job one would need to know computing, and the internet is useful for finding information and news – it was through more creative uses of these and other ICTs that participants seemed to develop the most skills.

A key finding from the research is thus that content creation itself is a powerful means of engaging people with media technologies that has added benefits of allowing them to voice their concerns and share and learn locally relevant knowledge. Furthermore, skills and training in content creation that can be built upon and further developed will be useful for participants, and having access to more than one distribution platform (e.g. radio, the internet, local intranets, video, and print) will expand the reach of that content.

The metaphor of 'voice' can be seen as empowerment through various articulations of engagement and creativity. New media, and especially combinations of old and new media (Slater and Tacchi 2004, Feek 2004) can allow for creativity and democratic participation. The ongoing critical engagement by cultural studies with the dominant definitions of the 'public sphere' is understood as the space where democracy might be constituted via rational-critical debate. Hartley (1999) argues that commercial popular culture, especially television, teaches cultural citizenship through his concepts of DIY citizenship and democratainment. Literacy in this context means working knowledges of the systems and forms of commercial popular culture (e.g. advertising 1999:156). Citizenship in this sense is not schooled and institutionalised, but rather informal, reflexive, voluntary citizenship (1999:156-157). A key part of Hartley's argument is that popular media is more democratic than formal education or formal democracy, allowing representation for/by a much broader demographic range. Negus and Pickering (2004) trace the changing meaning and uses of the concept of "creativity" through its various incarnations in Western thought – most relevant is the argument that fundamentally, cultural creativity (e.g. in music, film, television, visual art, or fiction) is a matter of *social communication*, not abstract aesthetic value. That is to say, available cultural resources (including both 'material' resources – content – and immaterial resources – genre conventions, shared histories, and so on) are recombined in novel ways, so that they are both recognisable because of their familiar elements, and create affective impact through the innovative process of this recombination.

The ictPR research shows that rather than simply understanding these technologies as tools for accessing and circulating useful information, participants engaged with them in far more complex and creative ways, mixing information and entertainment, the learning of skills as a pleasurable activity in its own right and skills as a means of directly changing their circumstances. To encourage creativity in communication and expression is to provide a 'play-space' for users – multiple possible entry points, levels of engagement, combinations of genres (humour, drama, puzzles to solve) – and with new media there are many more opportunities for participation and engagement. Thus, while

recognising the creative 'cognitive play' of audiences for preceding media, new media are understood by many as more 'playable' (that is, open to direct, creative participation) than any preceding form (Jenkins 2003; Fiske 1987; Silverstone 1999: 60-66). Avoiding a broadcast paradigm in the study and practice of new media creativity is essential (Kücklich 2004). New media are likely to afford 'new directions in flows of imagery and narratives [and] ideologies and virtual vocabularies are likely to have political and social consequences that are unforeseeable, perhaps unimaginable' (Gillespie 2002:173). Wilson further argues that this model of new media engagement as play is both universally applicable and tolerant of cultural diversity (2004: 3).

In terms of media use generally, it is important to recognise that many participants find that using ICTs is fun, and that this enjoyment is not necessarily in opposition to more 'serious' ICT engagements that involve direct or more obvious interventions in poverty. It is also important to recognise that this feeling of fun and excitement is a complex experience. The pleasure that marginalised and often illiterate people take in using computers or listening to their voice on the radio is an experience of symbolic and real triumph over technologies. These kinds of involvements with ICTs have an impact on participants' sense of social status and self-worth, and can be seen in some cases as an assertion of active citizenship.

In terms of what participants find interesting in their existing media consumption habits, it is clear that different people constitute different audiences, and that projects are sometimes challenged to deal with issues that might be locally sensitive:

> I asked them about the kind of stuff they liked to watch on TV. They said that the soap operas on TV taught them a lot about lives of other women and that different women learned the right and sometime the wrong from these serials. But more than anything else, TV had for them become an addiction that they needed.
> We somehow got talking about health and media and they started to tell me about these different shows on TV. One on the Tamil channel is a phone in with a gynaecologist. She said that it is very nice to see people from all over talk about stuff like sex lives, fear about small penises, reproduction problems so openly on TV. If they can do it why cant we on ND she asked me?
>
> *From Namma Dhwani researcher notes*

These same women had earlier made a programme about menstruation for Namma Dhwani,

> I asked them how they felt after they heard that programme on the radio. Usha, the more vocal woman, said that she felt good that she was able to discuss this on the radio because people have to be aware. She said that she has noticed that in many households mothers were rude and suspicious when their children missed their periods and did not think that it could be just a health or nutrition problem. ... I asked them why even in Budikote I have come across many women, who are educated and aware but still get their daughters married off, bowing to what they call public pressure - the 'What will people say?' syndrome Usha said that in this day and age it is impossible to please everybody and that if someone came up to her and asked her that question about her daughter then she would explain that until 18, a girl would not be mentally or physically fit to carry 'the burden of marriage'.
> *From Namma Dhwani researcher notes*

Not only have these women learned how to create content, communicate it and review its usefulness, they have learned a high degree of media literacy. Thinking about the audiences for programmes, as well as the intrinsic usefulness in terms of the information content is crucial – the Namma Dhwani team routinely thinks about what different audiences locally might be interested in and what kinds of programming will appeal to them. Namma Dhwani was generally perceived as 'women's radio' until the station started providing daily market prices and men started to tune into it. Discussions about patterns of prices and cropping with agriculture department representatives and farmers further sustained their interest and participation.

> There is a clear difference between the perceptions of information and its importance. Most of these perceptions coincide with stereotypes of 'male and female interests'. In March, the team for the first time decided to cover some 'hard topics' and the election itself.
> The reasons for covering political processes was because over the last year I noticed that most development work had a close relationship to regional political process. Be it roads, electricity, agriculture schemes etc. I have also noticed the men's tendency to take ND seriously mostly when we cover issues related to governance.
> *Notes from Namma Dhwani researcher*

Namma Dhwani is working to get involved in locally meaningful ways in activities that promote good governance. A good recent example of how they are doing this - through creative combinations of

media - is their coverage of local elections, as described by the Namma Dhwani researcher in the following extract from his report on the activities:

> … The counting of votes took place on the 1st of March and it took place in a nearby town 15 kms away, called Bangarpet. Now there is no media channel covering the counting process and periodically the winners in each Panchayat are announced by the authorities.
> Namma Dhwani placed a local reporter… with a mobile phone in the counting centre in Bangarpet. Every fifteen minutes, Namma Dhwani called up this mobile phone to hear about the election results. Nagaraj's voice came through in a speaker phone which in turn was placed near a mike. This meant that every word which Nagaraj was saying was being cablecast and narrowcast live. …The program went on to last till two thirty in the morning and Namma Dhwani at the end of the day logged in nearly three hundred phone calls from the community. Most of these phone calls were to appreciate Namma Dhwani's coverage and others were to ask for specific information about the results.
> Not only were the results covered live, Namma Dhwani also facilitated live interviews with candidates present at the counting centre, the MLA of Bangarpet Taluk, and other prominent members of the community members for their opinions on the elections. At the studio itself, Mamata an old volunteer was maintaining the mixing console while Vanaja, Bhavani and Ashwath, all volunteers were receiving and making the phone calls. Later, as the show progressed into the night, the quality of coverage increased substantially. Immediately after Nagaraj gave a report on the events, the volunteers at the phone started a debate about what Nagaraj had just reported. This debate/discussion would continue until it was time for the next phone call to Nagaraj. The topics covered in the discussion were free and fair elections, community interest in the elections, chances of prospective candidates etc.
> Prior to this coverage, Namma Dhwani played its role in ensuring a free and participative election. All candidates who had filed their nominations were interviewed in terms of their intent, their assurances, their background, educational qualification etc. One of the important questions included "If you win, will you allow Namma Dhwani to cover or record all Panchayat meetings?" Interestingly enough al candidates agreed to let Namma Dhwani be present during Panchayat meetings. Furthermore, Namma Dhwani also conducted a vox-pop asking people about what they thought was the most important thing to ensure a good election. The majority said that candidates standing for election should not try and bribe people to vote for them. Issues which could not be directly talked about like corruption and violence during elections were talked about using creative formats like radio plays and songs.
> This year, the communities at Budikote, AB Colony, Kodgurki and other villages nearby got timely information about the candidates and the results. For this effort, everybody in the Namma Dhwani team received numerous accolades from the community members.
> *From Namma Dhwani researcher's report*

Conclusion

The media models and initiatives in the ictPR project have been under development for only a short time but the potential of an inclusive and multimedia view of ICTs is clear. Content creation can be a powerful means of engaging people with media technologies and developing sophisticated ICT skills that has the added benefits of allowing them to voice their concerns and to acquire and share locally relevant knowledge. This can be seen as an example of the development of a creative ICT literacy and wider participation. Engagement with ICTs brought out innovation and creativity in marginalised users and communities both in content and in understandings of the media. The sites have demonstrated a significant local capacity for expression, programming and production using a range of media. Mixed media approaches have clearly facilitated an increase in local users' media literacy and a greater capacity to express their ideas concerning a range of issues and ideas.

This research reinforces Dagron's statement that

> technology alone may not be the answer if culture and identity are not at the heart of the discussion. When new technologies are introduced to a different social setting, what is transferred is not only technology itself, but also the social use of it, a set of assumptions and practices that emerged from another context and other needs.
>
> Dagron 2001: 31

It is precisely in the ways in which interventions recognise and work within existing communicative ecologies and social networks, and allow for creative expression and the promotion of voice that both technological determinism and western-centric practices and assumptions can be avoided. Given such a starting point, initiatives employing new ICTs can build upon existing community media and multimedia models (particularly community radio and video) which have long traditions of community content development and participatory training and production. This can help shift computer and internet use in the community from general purpose skills and information access to the production of locally relevant content.

Integrating ICTs with established media like community radio also draws on the strong organisation and ownership models of community media, which has positive implications for the sustainability of

local ICT initiatives. In many cases, through this process of integrating media, technologies and resources we are seeing the potential emergence of local community knowledge organisations that promote local voices and local content and work towards active citizenship. More research investigating the further development of these combinations and innovations in these and other local initiatives - taking into account the broader context of each site including local power critiques - will help us to develop clearer understandings of how ICTs might be employed for development, and allow us to investigate further the potential benefits of promoting creative ICT literacy and voice.

Notes

1. My thanks to Jean Burgess for her inputs regarding vernacular creativity. Thanks also to Andrew Skuse (Adelaide) for inputs into broader ideas of digital divide and the need for promoting local content creation. The research upon which this paper draws is the result of the hard work of the local researchers working in the local ICT initiatives in South Asia. The methodology employed was developed with Don Slater (LSE) and Greg Hearn (QUT).

2. There have been delays in establishing facilities and challenges in conducting research in the remote Bhutan project, so we have limited amount of research data from this site.

3. View this short film at http://cirac.qut.edu.au/ictpr/downloads/SonaliTantu.WMV

4. http://www.creativeindustries.qut.edu.au/research/cirac/documents/ICT3.mov

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Appendix 11: ISRG Working Paper 4

ISRG

Information Society Research Group Working Paper No. 4

Embeddedness and escape: Internet and mobile use as poverty reduction strategies in Ghana

Don Slater and Janet Kwami

June 2005

UCL

THE UNIVERSITY OF ADELAIDE AUSTRALIA

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Information Society Research Group (ISRG)

ISRG is a UK Department for International Development (DFID) funded university consortium that comprises University College London, Queensland University of Technology, The London School of Economics and The University of Adelaide. The research group draws together institutions and researchers with an interest in producing qualitative insights into the digital divide and processes of communications for development.

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Embeddedness and Escape: Internet and Mobile Phone Use as Poverty Reduction Strategies in Ghana[i]

Abstract / The paper argues that Internet and mobile phone use represent two opposed configurations of ICT use, rather than a single movement into an 'information society'. Moreover each configuration exemplifies quite different poverty reduction strategies deployed by poor urban Ghanaians. Internet use is widespread and is predominantly used to chat with or email foreigners, generally in the North, as part of a strategy of accumulating foreign social, economic and cultural capital; it is part of a poverty reduction strategy of 'escape' that is generally conducted in a fantasy modality. Mobile phones, by contrast, are used to manage existing and embedded social networks, the complex family, business or social connections that constitute both resources and obligations. These two ICT configurations are not only opposed to each other, but they are also in some disjuncture with government and NGO policies on ICTs. Most significantly, such policies foreground use of Internet to meet information needs whereas most users understand the Internet as a chat medium.

Keywords / Ghana, Internet, mobile phones, migration, kinship, diaspora

Introduction

Both mobile phone and Internet use have developed explosively in Ghana, and over the same time period. It would seem commonsensical to treat these twin explosions as two aspects of the same technological experience, and this is precisely the rhetorical strategy of many in government, donor agencies and the commercial sector, for whom Internet and mobile expansion together herald Ghana's transformation into an information society.

In fact, however, Internet and mobile use in Ghana are following quite divergent paths. They are used separately and they are used differently, a fact which confounded our own initial research assumptions: they do not add up to a single ICT development trajectory, let alone one that points toward a consistent 'information society'. To the contrary, we will argue, mobile phones and Internet represent dialectically opposed strategies for performing related projects of accumulating, reproducing and managing social capital. These opposed ICT uses are, moreover, continuations of historical strategies of personal and collective poverty reduction, now pursued through new technological networks. Moreover, configured through these older strategies, the new media are practiced in Ghana according to logics that are significantly opposed, or unconnected, to the ICT-poverty reduction logics through which they are understood by those in governance and policy. Finally, there is a methodological subtext to this paper, as the story it tells could not have emerged except through an ethnographic engagement with the place of technologies in the specific communicative ecology and poverty structures of the people we were studying.

To put the argument at its most schematic: Internet and mobile use are experientially and practically separate and different, but both connect to the two predominant dimensions along which Ghanaians typically construct livelihood and poverty reduction strategies: firstly, the negotiation of extended kinship networks as both resource and obligation, and secondly, the idealization of 'abroad' (*Aburokyire/Abrokyere* – literally 'land beyond the horizon' or 'far away land', usually referring initially to US and UK*)* as source of development means and of escape. Mobile phone use in Ghana predominantly aligns with the first of these strategies, and is consequently conducted in a practical modality, mediating the mundane realities of existing kinship, friendship and business networks. By contrast, Internet use is conducted within a 'fantasy' mode, oriented to realizing advantageous relationships with unknown and largely random foreigners. It should be clear that both mobile and Internet use are diverse in Ghana as anywhere; however this analysis addresses the preponderant use of both technologies, particularly in our urban research site.

The material is drawn from a DFID-funded one-year ethnography of two communities, one urban and one rural, with additional material and interpretation from PhD fieldwork conducted by Jenna Burrell (LSE). This paper focuses almost entirely on the urban research, unless otherwise stated. The urban site, Mamobi, is a poor area in northern Accra, largely populated over the post-war period by in-migrating northerner Ghanaians, as well as migrants from neighbouring West African countries. It consequently has a large (probably majority) Muslim population. This ethnic and migration profile, combined with high levels of poverty and a reputation for crime, gives Mamobi the local designation as a 'zongo', a Muslim slum. Male unemployment is high, with most employed men working as security guards or in the informal economy; women, as in most of Ghana, are almost universally

small traders. Infrastructure is extremely poor, with regular water shortages in some areas, horrific public toilets, regular flooding during rainy seasons, and low levels of health and education provision. Most people live in compound houses, comprising up to 35 individual two-room dwellings ('chamber and hall') in each, lacking kitchen, running water or toilets. One large sector of the fieldsite comprised habitations originally constructed as market storage structures, hence lacking windows. At the same time, partly because of its proximity to central areas of Accra, inhabitants have some access to wider urban experiences and facilities; moreover, media diffusion is extensive: although there are very few landline phones, both communication centres and mobile phone use are extensive, and there is widespread consumption of TV, radio, VCDs and videos, and of photography.

The Ghanaian Internet

Chatting: collecting foreigners

Over the course of our research, our urban site – Mamobi – has had about 10 functioning Internet cafes just along its main commercial road; a maximum of six at any one time, but now reduced to two. Even with only two survivors, this testifies to a significant Internet interest and use in such a poor area, and these cafes are busy, well known and used heavily (alternative access to Internet – either through private domestic use or other public access points – is virtually non-existent for Mamobi residents). The users are largely young – school kids and youths; predominantly male but with significant female patronage; mixing Muslim and Christian communities with no apparent discrimination.

Mobra (Mobra International Ventures) has been around for 18 months, has an excellent 'radio' connection (i.e. microwave mast) and twenty functioning computers, open 9 am to 4 am every day. On a typical afternoon, 18 or 19 of these computers are being used. On every single screen we see the same activity: *everyone* is chatting, either on IM (Yahoo or MSN), or in Yahoo chat rooms; perhaps one person is emailing a chat partner. The chat partners are all 'abroad', 'outside', mainly in Europe or America (but with a surprising number of chat partners from Asia – Philippines, Hong Kong, Indonesia, India, China). The chats are largely short, cursory, disconnected, ephemeral. They are not cheap: 5,000 cedis (US$) an hour is usually far more than a school kid's daily chop money (i.e. lunch money), and chat – as everyone says – eats up a lot of time. Moreover, café owners are not consistently sympathetic to users wanting to combine their resources: most insist on one user per computer, all paying, though they do not always enforce this. But kids will come here several times a week, for several hours, solely to chat with foreigners.

At Lambo's, down the road, the scene is basically the same, as at every café we have visited here or elsewhere in Accra. We meet Asma, who is 14 and a good, serious student. We get to know her after we've stood behind her, fascinated, for quite some time: Asma has up to 15 MSN chat windows open at any one time, and cycles through them, spinning her plates of chat with a random selection of foreigners accumulated through search and chat facilities. They are of different ages, genders, locations, and she insists on the conventional ASL query ('age/sex/location?') at the start. None of the conversations seems to get much beyond ASL, and different versions of 'how are you?', 'what are you up to?'. In fact, she seems more keen on spinning the plates (cycling through the windows) than developing the conversations. One window presents itself fairly convincingly as a Midwestern American woman in her late 30s, who seems quite keen to learn about Ghanaian life. Asma is quite curt with her and cycles on. Language might be one issue, but there is something else as well. And it is not shyness: Asma replies to queries with confidence and is very assertive online (though not in face to face conversation). She is also ruthless with any sexual innuendo (and her language certainly extends to skilfully identifying this).

But she is very keen to keep moving on. After much conversation we are still not clear what she is after. In reply to questions, she expresses her feelings in a conventional manner that we have come to expect almost universally: it is 'interesting' to talk to foreigners, you 'learn a lot'. To a great extent, her answers have to be taken at face value: she believes there is something intrinsically *enriching* about being in direct contact with foreigners, and the Internet (i.e. chat) is the most direct access imaginable to innumerable legions of the foreign.

We could say that Asma's relationships with foreigners are now mediated through the Internet – before this she would probably have had penpals, or have written letters to any northern address she randomly encountered. (An ICT policy maker recalled to us that as children they would find the addresses printed in Gideon bibles and write letters to them.) But it is equally accurate to say the opposite: Asma's Internet is mediated through conceptions of foreigners and 'abroad' that are fundamental to contemporary Ghanaian life. The idea that foreign connections are 'enriching' makes full use of the double meaning of the word: Asma feels socially and experientially broadened by these encounters (she is happy that while we were watching her she carried out a chat in Spanish with a partner who taught her a few words). Those around her are seeking other kinds of enrichment alongside this broadening: invitations abroad, or enticing a visitor to Ghana, help with visas, financial support for school or church, business, outright scams, marriage, whatever.

What most stuns us however is that although Asma is a serious student and has been coming to Internet cafes for about a year, several times a week, she has only once visited a website: after the tsunami, someone pointed her to CNN for news, but she has never returned to CNN, has never done a search, rarely sends email, and has no awareness of the existence of 'the Internet' in the sense of a world wide web, information source, multimedia environment or even entertainment. It simply does not exist for her. For Asma, 'The Internet' is a chat facility for collecting brief encounters with foreigners. These encounters are indeed brief, and generally do not extend to a second meeting, although she will still add them to her contact list.[ii] She – like many others – has many many contacts listed, organized by country; few if any of them ever appear as 'online'.

The accumulation of foreign chat partners can involve and combine all these enrichments, and they are not regarded as incompatible. To make a friend and to use a friend to get resources is no more contradictory than to have an extended family and to rely on that family for occasional money gifts and other resources to get by. The main difference is that a foreigner, unlike family, asks for nothing in return but also needs to be made to acknowledge one's needs or desires. Some local academics have likened the Ghanaian Internet to a 'cargo cult', and the analogy is in some respects plausible: as in the Papua new Guinea case – in which locals employed 'magical' devices in the attempt to make American and European cargo ships appear (and hence to exercise control over North-South flows of goods) – the Internet appears as a magical means to conjure up and command the random and arbitrary magic of the North.

The randomness of connection can extend to ostensibly rationalised and instrumental business uses of the Internet. A young man, Eric, is trying to market abroad glass beads made by his mother. He sends up to 60 emails a week to foreigners, and at first sight his approach appears entirely random, sending what is effectively spam to any email address he can collect, with no analysis of its appropriateness or effectiveness. He searches a biography of John Jacob Astor for names (of long dead American millionaires of the early C20), which he then runs against email address extractor facilities. This is not far removed from sending letters to an address copied from a Gideon's bible. For him, too, the Internet is effectively chat: he reads nothing on the web, and makes little use of the web as a search facility to rationally target business communications. Nonetheless he claims one success (an American woman bought $3,000 worth of beads from him. This could not be verified (the emails were deleted), but his belief that his obsessive investment in random contact with the North would pay off rendered the whole approach rational to him.

It is important to look more closely at the 'randomness' of these encounters, see how it reflects back on 'random' social chat. Eric has a search strategy, if one that looks irrational from the point of view of Northern business and ICT practices. Firstly, in his concept a search engine works by giving an answer to discursive questions rather than by narrowing down arbitrary information indexed by keywords. Similarly, chat users in search of partners often have strategies for finding relevant people that are not in synch with the structures of chat rooms, profiles and dating sites. Secondly, Eric is extending to the Internet the same strategies he previously employed when selling the same beads on a tourist beach: approach everyone and give it a try, a strategy again common to chat partners. Thirdly, some search strategies only emerge on closer examination: a (male) chatter surveyed dating sites for middle aged Midwestern US businessmen to establish romantic connections; another careful targeted 'older and fat white women' as the most plausible prospects. Fourthly, Eric and others may attribute their lack of success not to faulty understanding of the communication media but rather to lack of trust in the absence of face to face interaction: Eric felt that if he could get to the States and meet these people, they would trust him and deal with him. Finally, both Eric and our chatters tend to imagine foreigners as people who will act in the same Ghanaian style that they do, as people who are looking for any opportunity to buy and sell something, anything, or to make any kind of 'enriching' contact.[iii]

After chat and email, the second and *only* other significantly widespread use of the Internet is to pursue educational opportunities abroad. This is also the only significant use of web as opposed to chat that we have encountered. It has both the random character of the glass bead man, and the same deep roots in long-term personal poverty reduction strategies focused on securing northern social, cultural and economic capital. It involves finding as many sites as possible for northern colleges, courses and scholarships and emailing or filling in online forms. Before the Internet, more elite secondary school students had a name for this – 'comsaw' – which they pursued by writing innumerable letters to the very same institutions. A similar and related web activity is visiting sites connected to obtaining visas for foreign travel.

One contrasting example: Selima does not chat, and does not seek out foreigners. Her main use of the Internet cafes, which she visits every weekend by saving a portion of her daily chop money, is to email friends in Ghana, particularly school friends and friends from an earlier stay in Kumasi. This internal communication is perhaps becoming more common and may form a part of the Internet use of those who are mainly chatting with foreigners. However, Selima has never once visited a website, and never used the Internet for any kind of information search or for school work. And she is a very good and ambitious student, who has secured a scholarship to a top secondary, and whose siblings have gone to university, as she undoubtedly will, despite a widowed mother and considerable domestic poverty. Moreover, in her good secondary, she mixes with quite well to do girls, some of whom have both computers and Internet in their home (an *extreme* rarity in Ghana), and her close friendship network with these girls is also a 'schoolwork group'. *None* of them has ever visited a website or used the Internet in relation to school. Selima's Internet use is therefore closer to the mobile phone use we will describe below, and that is precisely the point: her Internet, framed in a practical modality oriented to mediating existing relationships, is still not 'our' Internet' or the Internet inscribed in ICT development policies.

The situation in our rural site is a less intense version of the same dynamics, but with a change in the geographical scale of the fantasy connections. Twifo Praso, the district capital, has an Internet café set up by the District Assembly, with excellent connectivity (when there is electricity) and 20 computers in an air conditioned room. Although it is a development project, it is conceptualized on the model of a cyber café, with hourly rates, and that is how it is mainly used, except for some work with outlying schools. Cybercafé style use of the Praso centre was little different from what we found in Accra, and such users were the equivalent of Mamobi youth: only young people living in the main town, largely because they were secondary school boarders, could have this kind of regular Internet access, and they used it for the same kind of chat. Those village people who have any connection to the computer centre are generally conceptualising 'abroad' internally to Ghana: it is their connection to the other Ghana, the Ghana of cities with jobs, education and trade, that counts. First there is Accra and Takoradi, before there is London or New York. The computer is both the sign and the vehicle of a widening rural/urban gap, a little understood technology that threatens to cement urban youth's hold over good secondary school and university places, over English, over foreign connections. The presence of computers in Praso, the chance for a child to sit for an hour with Mavis Beacon typing tutor, is a symbolic rather than practical enactment of a demand to narrow this gap, the losing battle with the city. Significantly, the Twifo Praso District Assembly put forward as an important motive for initially installing the computer centre their desire to keep, or attract, bright young people to the district: if they felt connected to the wider world while here, could maintain contacts and use global information resources, they might not so resent their postings to remote agricultural services or village schools. For everyone – here as in Mamobi – the Internet is firstly about 'abroad' and elsewhere.

These themes map out the regular and predominant patterns of Internet use in Ghana, and all of this is replicated in other parts of Accra in Jenna Burrell's work.[iv] This needs to be stated carefully. Random chat with foreigners is the predominant activity by which we would characterise the Ghanaian Internet. For many people, chat constitutes their exclusive understanding and use of the Internet. For some, random chat develops into more enduring (and more email-based) relationships. And we certainly find people like Selima who email with Ghanaian friends rather than chatting with foreigners (though she finally confess that she did not chat, firstly, because she saw it would be too expensive, and secondly because no one had yet taught her how).

We can certainly point to other uses of the Internet but we would have to actively seek out special categories of users. We find a couple of school pupils whose parents are working in Nigeria; they regularly communicate through email and assemble in cafes for family chats. There is the older man from a Muslim NGO down the road who conducts much of his work through email. There is the man

going home to Tema who researches his mobile phone on the Nokia website, and is angry that there are many businesses charging to decode phones when the codes are available for free on the Internet. There is the cab driver whose brother in Germany either phones or emails to arrange shipments of used cars, as well as to keep in touch with other family matters. We find a local mobile phone card wholesaler who emails corporate clients to inform them of new promotions, getting orders by mobile phone in reply. And above all there are the many small businesses who use Busy Internet as a kind of hot-desking public office space (see below). All of these, however, stand out as exceptionally rather than normative.

Abroad

The full meaning of 'abroad' in Ghanaian life is beyond the scope of this paper. The sole point we want to establish is that 'abroad' represents a central dimension for thinking about livelihood and poverty reduction strategies, and that the Internet is framed by everyday users as a reasonable extension of this mode of thinking. While internal migration has played an important role in Ghana (which we continued to register in both urban and rural sites), the importance of 'abroad' reflects Ghanaian historical experience from the 1960s onwards. Before that point, Ghana had a net immigration surplus, with most outward migration performed by the elite, travelling to the north for education and professional employment, or to high status jobs elsewhere in Africa. By the 1980s, Ghana was losing large numbers of people, with continuous concern about brain drain, and losing them from all social classes. This was largely a result of near economic collapse, partly resulting from crisis in the cocoa market, and partly from related political instability. For Mamobi, the predominant attitude may be summed up as follows: Ghanaians generally depict themselves as hard working, honest and entrepreneurial, capable of high achievement if not hampered by lack of opportunity (education, capital, connections). Yet, it is often said, one could work hard all one's life within Ghana and end up with very little, whereas migration to the north will bring access to all the opportunities and rewards by which one can realize one's capacities. The discourse is as much of fairness, recompense and social justice as of simple gain. This personal attitude is often aligned with a national narrative in which Ghana has never realized its promise of being the first independent African state, endowed with significant natural and human resources, good governance and stable ethnic relationships, and a charismatic leader and leadership role within Africa. In both personal and national narratives, the advantages of the North include material wealth, educational opportunities, modernity in business and governance, just deserts and an absence of corruption and – very symbolically – technology and other intellectual capital that are put to effective use.

Moreover, both narratives are highly ambivalent. Personally, one would like to realize one's ambitions at home rather than abroad; collectively, there is an intense cynicism and distrust of Ghana's acknowledged dependency on donor aid, centred around both the ineffectiveness and corrupting influence of donor dependency.

The overwhelming – often exclusive – predominance of chatting over all other online activities, clearly performs a consistent and central theme in Ghanaian life but does so in fantastic rather than practical ways. It has all the appearance of practicality, and that is central to its pleasure: chat is direct conversation with foreigners, direct access that might lead anywhere, might realize all ambitions in a seemingly unmediated way – yet rarely does. One image captures this for us: a young male Mamobi Internet user is telling us about his plans to study in the UK; he found a course and applied for it online, and he proudly shows us the letter he received. The letter clearly states that he has been rejected because he does not meet the entry criteria. Yet he presents it to us, and the friends around him, as an acceptance letter, and as if it were itself a ticket to London. We do not know how to respond or whether to point to the discrepancy between what he is saying and what he is showing us. He is literate; and he does not appear to be lying, at least in any straightforward sense. Our interpretation is that the symbolic charge of this embodiment of foreign connection – a letter from a UK university – literally neutralizes its content. And that is the feeling that online chat promises to deliver continuously.

The point of this analysis is not to condemn the bulk of Ghanaian Internet use as unproductive or unrelated to development or poverty reduction. Above all, this description is not intended to support development discourse distinctions between worthy and unworthy uses of 'information resources'. We certainly find it difficult, at a personal level to avoid frustration – and boredom – with the restricted use of Internet possibilities, but that is hardly the point. The issue is simply that any intervention in Internet use has to work in relation to the overwhelmingly dominant local framing of the technology, deeply rooted in a much longer history of media use and development thinking.

Negative connections

We can partially account for the predominance of chat with foreigners in terms of the importance of abroad in livelihood strategies, but we also need to look at negative aspects of the ICT context. Essentially, Internet use is also confined to this modality because it exists in a social and institutional vacuum in Mamobi: in the absence of guidance and of available alternative framings or mediations of the technology, users – largely informed by peer group users sitting next to them at the café – 'naturally' frame and use it as they previously understood penpals, letters and other means of encountering foreigners. For example, we told Selima about websites and went with her to Lambos to search out schoolwork related resources. She was surprised and enthused to find that the web existed (after having used email intensively for a year). There had been no guidance from school, peers, NGOs or cyber café staff or owners: the simple fact is that no one had told her, or her peers about the very existence of what other users understand as 'the web'; and what she knew of the Internet she had learned from peer culture (as was also the case for them). Selima's (and other local) understandings of 'the Internet', therefore, exists within a structural bubble, unconnected to other potential framings, and 'the Internet' is therefore left to go in culturally normative directions. The question in Mamobi is not really 'why do people mainly want to chat with foreigners?' but rather 'why are there no social networks that connect Selima to alternative and broader online activities and resources, that enrol other capacities of the Internet?'

In this respect, we need to look at another 'fantasy' that frames the Internet orients it to abroad and to 'enriching' encounters with random foreigners: the concept of lawlessness.

The headmistress of a successful private school tells us about several recent parent teacher meetings she has held solely to decide on what punishments they should inflict on students who are caught using the Internet in cafes. They have tried caning the kids in public assemblies but this has not deterred them. When she suspended some girls, the parents did not even think to ask them why they were not at school for a week, and without parental support there will be lawlessness. Indeed *that* is the issue: for the headmistress, Internet use is just one example of the lack of parental control that has lead to all the lawlessness, crime and poverty of Mamobi. Internet use reflects this general problem, but it is itself particularly nasty. Young Internet users, she says as a matter of simple fact, are mainly watching pornography and engaging in credit card fraud. As a connection to 'abroad', the Internet brings loosened sexuality (hence further eroding family surveillance) and the criminal attitude of getting 'something for nothing' from the north.

The headmistress's husband actually started the school in 1983 when his academically able daughters had tremendous difficulty gaining admission to a good secondary school just over the road in a wealthy neighbourhood. It was not because they were poor or Muslim, she felt, but because of Mamobi itself and its reputation: low, dirty, poor, disreputable and criminal. It is a 'zongo', which means a slum for in-migrating and largely Muslim northerners (northern Ghana, but also Burkina Faso, Mali, Nigeria, Cote d'Ivoire, etc). The Internet represents the return of all they have been trying to suppress over the past 20 years; starting by citing the usual charges of porn and online fraud, the headmistress quickly turns to representations of what has really always concerned her: Internet use is a contemporary case of children being outside, on the street, beyond parental surveillance, control and understanding. It is part of a complex of generational deregulation that leads to crime, teenage pregnancies, HIV/AIDS, family breakdown, disrespect and therefore – and this is her point – unemployment and poverty. The Internet is the very opposite of a development tool, but she says this explicitly within a highly reflexive analysis of development strategies and barriers.

This is a standard, almost proverbial, response to the Internet amongst non-users in the area. Although we spend some time discussing with her the paradox of a headmistress punishing her students for using the facility that is globally regarded as central to future education and advancement, her chain of associations holds firm, and she likens her Internet prohibition to the way she ensures that the gates of her compound house are closed and policed by 10.00pm so her children cannot go out into the streets.

The issue of fraud is central, and any conversation about the Internet ends up with fraud. Fraud means credit card fraud – entering stolen numbers on websites to get goods from abroad. People offer detailed explanations of how it is done (there is even a Twi word for it, in Nima – sakawa), which recount the social organization and coordination of these operations across several continents, the existence of websites that generate false numbers, the areas of Accra most associated with fraud.

Everyone has stories of someone they know who has managed to get something by fraud. And they enjoy detailed discussions of why Internet fraud is a particularly heinous offence, what gives this technological crime its specific opprobrium (for example, it is an intrusion into the intimate sphere of the family: husbands will unfairly get into trouble if their wives find illicit payments on their credit cards).

We have investigated the reality status of Internet fraud from many angles, and cannot be sure how much is urban legend and how much is actual activity. There are clearly documented cases that have gone to court, but these are few, whereas fraud is claimed to be general and pervasive, and is used to characterise the entire Ghanaian Internet as such. We have many interviews in which people claim that they regularly and directly observe people at Internet cafés typing numbers into websites, but we have no idea how many – if any – of these attempted frauds have succeeded. We have not met anyone who has personally acknowledged receiving goods by fraud; the stories are always about a friend of a friend. Busy Internet had to block access to secure server connections, possibly in response to complaints from American companies that traced attempted fraud to Ghanaian ip addresses; but even here (where one would also expect far higher levels of techno-competence) there is no evidence as to whether the frauds were successful or just a nuisance, and there is some suspicion that Busy simply took these measures to preserve its reputation and that of the Internet (just as it very publicly bans pornography) in the face of the moral panic around fraud rather in response to actual criminality.

If we assume that successful online fraud is rare, but that both awareness of fraud and unsuccessful attempts at fraud are widespread, then our interpretation will point to something like urban legend and moral panic around new media. The Internet is a material cultural object through which Mamobi can speak about and negotiate its own reputation and its history as a zongo. Just as the headmistress anchors her social theoretical account of Mamobi's developmental backwardness in Internet fraud, some young people are thrilled by the proximity of this opportunity to take on a techno-outlaw status, even if only by distant association with the friend of a friend whose alleged fraud they've heard about. Moreover, even claims to fraud can be understood as a shadow form of the same shrewd and exuberant commercial opportunism that Mamobi youth are proud of – having the knowledge and wit to spot a good opening in new markets, new developments, new technologies.

For both the youth and the headmistress, Internet fraud crystallises the (positive and negative) magic of foreign connection, and it is probably as much of an idealized framing of the Internet as is random chat with foreigners. However, what it accomplishes in practical terms is to lock the Internet firmly into a social vacuum where alternative framings and uses cannot touch it, and to embed it further in the modality of fantasy connections with the North.

Ghanaian mobile phones

It is likely that the vast majority of phone calls in Ghana are uncompleted calls, known as 'flashing'. You call someone, let it ring once or twice, and disconnect before the call is completed; your name and/or number appears on the other's mobile, and this communication is interpreted contextually. People may have a routine of flashing the same four or five close friends and relatives every morning, to say hello, or of flashing a girlfriend or boyfriend regularly to assert presence and stay close. They may flash people to make or track meetings arrangements ('flash me when you get to Busy', 'flash me when you are on your way to the meeting'), or they may simply flash to say 'phone me back, I haven't any units left or I want this call to be on your bill.'

There is another kind of flashing occasion which is both practical and symbolic. Two people are introduced to each other for the first time through mutual friends or contacts. One flashes the other, and says, 'Now you have my number'. The receiver saves it in their contact list and then flashes back, and the saving is reciprocated. A relationship is acknowledged and pragmatically materialized in the technology; the social network is expanded and reciprocal access is allowed.

This mutual acknowledgement and inscription is apparently identical to Internet chatters who accumulate long MSN or Yahoo contact lists, and this is precisely how Internet users would like these lists to work: a wealth of live foreign contacts who are within 'flashing' distance. We might also interpret the many short, contentless online chats as a kind of online flashing, the point of both being to assert the mere fact of connection itself. But the Internet list is the exact opposite of the mobile

phone list: where the phone list inscribes an existing relationship into a pragmatic network (a real relationship is embodied in a listed name), the Internet list treats names as the means to magically constitute relationships (they are names without bodies). People proudly show long Internet chat lists largely comprising people long vanished or only briefly talked to very long ago. The phone list comprises useable contacts.

Flashing involves a clear and much discussed economic rationality, designed to win the fierce battle to keep a mobile in permanent operation. But this battle itself indicates the great importance attached to staying connected by mobile, and this importance – we would argue – is tied to the costs of maintaining, managing and expanding already existing social networks. Ghanaian mobile phone use consistently presumes stable, obligatory and demanding relationships and networks that precede phone use. Ghanaians not only use the mobile to reproduce those relationships as immediate, embodied and geographically proximate, as live and intimate. More importantly, the mobile is used to manage and reduce the heavy cost (in time, money and hassle) of the obligations imposed on them by the relationships themselves.

Michael, a man who flashes the same five people every morning, is not merely keeping in touch but also discharging obligations and responsibilities. Two of the flashes are to young female relatives boarding at a school in Accra, over whom he has a familial watching brief, to make sure they are behaving, to mentor them and to look after their welfare. The flashing, and occasional completed call, asserts and discharges these obligations which would otherwise involve considerable inconvenience and worry, and would distract from his more pressing work obligations as do so many of the calls of family. His other routine flashes are to friends he went to school with, now living in other cities, at distances that preclude regular meetings. The mobile both maintains those relationships, and his obligation to maintain them, with minimal effort.

Ghanaian kinship is often perceived and talked about as changing over recent years, and the mobile phone both marks and allows negotiation of important ambivalences about kinship obligations. Young and urban Ghana (and Ghana has an exceptionally young population, with extremely rapid recent urbanization) recognizes continued close ties and obligations to extended family and to village and region of origin (one's 'home' is one's family village, not one's current residence). At the same time, people recognize shifts towards an urban, modern and young lifestyle: urban marriage, for example, clearly still involves the extended family, but generally not polygamy (which further extends the family within older structures), and tends to treat the couple as an independent and nuclear node within a broader network, more than as a continuation of matriarchal or patriarchal lines. Extended family, stretching back to the village and forward to family abroad, continues to be a resource (for money, goods, employment, childcare, etc) and needs to be cultivated. It also continues to be a source of continual obligations and demands which have to be managed and even avoided or deflected, or delayed. Moreover, family obligation goes beyond blood relatives to people who are very close to other family members and are treated as family ('my sister' may mean my mother's daughter, my father's daughter by the same or different mother, my cousin (at any degree of remove), or a close friend of my blood sister or a girl who used to live with my aunt, etc, etc). These obligations may be unproblematically accepted in full or in part, but at the same time they are clearly acknowledged as an overhead on daily life, as a weight that drags on current personal projects, that holds one back.

Gabriel is a sociology graduate from a mixed northern and Fante family. His northern father is a junior son of a poor northern farming family, with traditional religion and extensive polygamy. The father was sent for southern schooling under an Nkrumah initiative and did very well, becoming a scientist, as well as looking after family cocoa farms for both his own and his wife's family. When his father recently became seriously ill, Gabriel had to step into his shoes to manage the cocoa interests. This was at the height of the crucial buying season, which he had to negotiate on the family's behalf with virtually no knowledge or experience of agricultural life, reporting back to family councils which were rife with erupting tensions between his mother's and father's extended families that had bubbled beneath the surface for decades. Gabriel's own life projects were placed on hold for the indefinite future, and without any clear or plausible exit strategy from these obligations.

Above all, the weight of obligation is imposed through direct personal access, and this is where the mobile both intensifies access but also allows the mediation and management of obligation. For example, one mobile phone company uses the phrase 'funeral traffic' (internally, not in public): mobile phone traffic entirely generated by the need to make funeral arrangements. Funerals are the central social event in Ghana, involving several months of planning, financial negotiation, mobilizing and managing extensive divisions of labour amongst dispersed segments of the family, coordinating

travel, and so on. 'Funeral traffic' not only labels the density of communications involved but also its direction: funerals are generally in the home village, whereas the bulk of decision making, resource and labour is in the city based family; funeral traffic is largely between the cities and between the city and the village. The mobile obviously minimizes the need to travel and speeds up planning and coordination, but it also allows the city-based family to remain at one remove, able to keep up their own lives while discharging their obligations.

Similar themes are reflected with regard to relatives abroad. Most Ghanaians express a strong desire to go abroad, but their feelings towards those who have made it to Europe or America are profoundly ambivalent: there is pride, envy, resentment and greed, generally in direct proportion to how much money or goods the émigré is sending home, and how widely she or he is distributing back home the resources and riches they are assumed to be enjoying in London or LA. In a discussion of new health insurance plans, a group of local health workers argued strongly that financial contributions to the scheme should not take into account whether you have relatives abroad: some relatives support the family, others send back nothing (either because they are not recognizing their obligations, or because they have their own families to support up there).

The mobile has a complex role in these connections. Firstly, the phone itself is the preferred gift to send back to Ghana, is itself the resource to be distributed and itself represents a discharge of obligations. It is preferred by those abroad because it is relatively cheap and is easy to send: as one person put it bluntly, it is better to send mobile phones home than the fridges they used to ask for. Recipients value the phone as a practical resource, as a mark of connection to abroad and to the relative abroad, and as a straightforward status symbol – modern, northern technology. Secondly, the gifted mobile phone is a way of managing North-South family connections: both sides see the convenience in at least one person at the Ghanaian family end having a mobile phone and acting as communications centre for the whole local family, distributing communications, duties and opinions on family issues. Finally, the gifted mobile becomes the object and mediator of further negotiations over resources and obligations: money to buy units is the real cost of mobile use, and frequently involves money remittances from the same, or different, relatives abroad to keep the phone in operation; these remittances are themselves both practical and symbolic of their continued acknowledgement of extended family obligations. Again, the mobile both discharges obligations and reproduces (practically and symbolically) the sense of constant and inescapable family demands.

The discussion up to now has focused exclusively on the extended family context. As noted, 'family' extends to other, non-biological connections; moreover, friendship networks (egg, informal and formal youth groups, school friendship groups) have a clearly familial structure of reciprocal obligations. Mobile use in these networks largely reflects the themes already discussed. An important issue here is the way phone use may reflect distinctions between reputable and disreputable obligations. The most important example of this concerns gender. Boyfriends and 'sugardaddies', as well as fiancés, will give their girlfriends mobiles so that they can be in contact directly, regularly and at will, and clearly with intentions of both control and surveillance. The woman's possession of a phone directly reflects her sexual status, and issues of sexual danger. There is the constant charge that mobiles increase the conduct of illicit relationships, and escape family surveillance. More practically, a young woman without a job who owns a mobile may attract nasty comments and a bad reputation: how can she pay for units? She must be using some man somewhere (or several). The use of a phone directly reflects relations of use and obligation between men and women.

Beyond this, however, there is an important but ambiguous distinction between 'social' and 'business' use of phones. The distinction is constantly asserted, for example in almost all of our specifically phone-focused interviews. People categorize their calls (mobile or land) into business or social. Non mobile users, particularly women, will say that a mobile is a good idea – or even essential - if you have a business, but is not financially justifiable if you don't. And multiple mobile ownership is entirely associated with local business people. Phone users frequently make such distinctions between social and business use, but it seems to break down almost in the same breath. The structure of Ghanaian life and enterprise makes it almost impossible to neatly divide contacts into business versus social. The distinction seems more of a legitimation strategy: a justification for having a phone (this is not frivolous or status driven; I need it for business) or an excuse for not having a phone (it's not that I cannot afford one, but I have no business and therefore no *need*). The rhetoric is, again, a language of practicality, concrete relationships and economic rationality.

The context for the Ghanaian mobile is the management of existing and obligatory networks, above all familial, and a balancing of acknowledgement and avoidance/evasion; as well as – perhaps – a 'modern' balancing act between 'my' life and my family. In contrast to the Ghanaian Internet, the

mobile is about the practical management of the real rather than the attempted realization of the ideal (foreign) relationship.

ICTs and poverty

During a long discussion with a very tight friendship network of young lads in Mamobi, about their hopes and ambitions, the conversation returned regularly to paranoia. 'If I ever got the chance to go abroad, I would not tell anyone until I got off the plane in London.' This is a common sentiment, and the reasons are conventional: other people are envious and try to hold you back; they will place curses and evil wishes on you and make something go wrong; they will say terrible things behind your back; or simply talking about your good fortune will somehow jinx it. And if it is not the evil envy of your neighbours, then it will be the demands of your family that will follow you and burden your fresh start. Stories of people hiding their new wealth are as common as stories of people flaunting it through new houses or largesse.

This conversation reflected the key poles of everyday poverty reduction and livelihood strategies in Ghana: the ideal escape abroad and the local web of obligations. The contrast between mobile phone and Internet clearly reflects this dichotomy between embeddedness and escape. It therefore also reflects the two traditional modes in which familial poverty reduction strategies are formulated: local resources (above all the family) as resource and obligation for mutual survival, and 'abroad' as the key to real success, development and the future. Home and 'abroad' may support each other, or undermine each other, or both; in any of these cases, the media associated with each strategy has to negotiate all this ambivalence.

If this analysis is correct – that the mobile manages embedded reciprocities and the Internet projects idealized gains from abroad – then we must also argue that mobile phone and Internet have been framed and constructed from the start as poverty reduction and development strategies. That is what they always already are; how they have been locally constructed: they make sense in terms of the two central modes of poverty reduction in Ghana over recent decades. If this analysis is correct, moreover, then the development agency question – 'how can we use ICTs for poverty reduction?' – is the wrong question, because it is always asked too late: it presumes the need to connect two disconnected things ('ICTs' and 'poverty reduction') whereas Ghanaian ICT use is already constituted largely as a poverty reduction strategy, or rather as two complexly and inversely related strategies, one to do with practical local networks and one to do with imaginations of foreign connection. The problem is that the policy makers do not understand, or agree with, or acknowledge these strategies.

The clearest example of disjuncture between public policy and actual ICT use concerns one feature that is common to both Internet and mobile phones in Ghana. It should be clear from our discussion that everyday users understand both media almost exclusively as means of communication and almost never as sources of information. This extends, as we have seen, to virtual ignorance of the very existence of websites, of the Internet as 'world wide web' or of the very idea of a search engine – and this even amongst enthusiastic young users, who are also educationally ambitious. By contrast, governments and NGOs connect ICTs to development and poverty reduction almost exclusively through concepts of information access and information resources. In the Ghanaian context, this aim may be correct and laudable but it does not connect to the 'Internet' and 'mobile phone' that has already been constructed by everyday users in Ghana. Who will look at their informative websites if websites do not constitute part of *their* Internet?

To be clear, the distinction between communication and information is not only imprecise but inappropriate to most of our ethnographic material. We are largely deploying this distinction ironically, and from the point of view of government and development agencies rather than that of everyday users: 'information', as it is used in public ICT discourses, signifies worthy use of ICTs as tools for accessing 'useful' data, with recognizable paradigm examples such as health information, school materials, government information and so on. We do not wish to deny the existence of specific and utilitarian information needs in this sense; but we equally would not want to denigrate the everyday information that is intrinsic to communicative use of ICTs. At the most obvious level, mobile phone

users in Mamobi will frequently say that one of the most important benefits of the mobile is saving wasted journeys: quite simply, mobile communication allows the transmission of essential information such as a person's whereabouts so that one does not spend a day travelling to see someone who isn't there. Similarly family information about states of health, finances and personal problems is essential information, and reducing the cost and inconvenience of communicating it is a major boon.

The central issue is not pitting informational versus communicative uses of ICTs but rather finding ways to match up everyday informational uses with policy concepts of information. There are many simple and practical steps that might address this disjuncture. Firstly, as already discussed, the extensive Internet use we see today in urban Ghana has emerged in a social and policy vacuum. As a result there are no social agents with an interest in framing new media and mediating it to users in terms of its wider and more creative possibilities, let alone their wider informational potential. Mamobi Internet users learn chat from their friends and set up an email account with the help of café staff. Neither government nor teachers nor café owners nor local organizations point the user towards alternative facilities. There are very practical and small scale moves that could be made, such as:

- public information posters listing useful websites and how to access them, to be displayed in cafes, schools, churches and clinics;
- the enrolment of information intermediaries such as local teachers, religious figures, health workers, café owners and operators, through local meetings and training. This will inevitably involve public-private partnerships and new organizational structures to involve ICT stakeholders.
- connecting informational resources to the actual communicative uses of Internet and mobile phone, by focusing on chat rooms, listserves and email rather than websites, or by distributing information through SMS;
- focusing on mediating information through a range of media, rather than attempting to shift Internet and mobile use: egg, enrolling information intermediaries (such as local youth groups) to source information online which can be disseminated through posters, leaflets, loudspeakers, local meetings and local radio.

Such suggestions point to the need to frame ICTs in different ways and to embed them more realistically in local social and communications networks, and to do this both through new content, new communication channels and new institutional contexts that expand the local sense of just what the Internet and mobile phone *are*. The corollary of this analysis is that if government and donors invest in ever more ICTs infrastructure and access but without addressing the framing and use of these media then they will simply produce more random chat with foreigners (in the case of Internet) and unrealized potentials in the case of mobile phones. Indeed this is what we observed in Twifo Praso, our rural site: the provision of well specified Internet and computer access largely replicated the structures and practices of a typical Mamobi commercial Internet café.

Finally, and to return to the central themes of this paper, there are good reasons to take very seriously the predominant current framings of mobile phone and Internet use – managing concrete relationships and pursuing idealised ones abroad – and for taking them as points of departure not only for expanding ICT use but also as clearly important in their own right. Firstly, extended use of ICTs to manage migration issues (internal and abroad) represent significant developmental gains and in numerous ways. In line with current concepts of migration and transnationality, ICTs can enhance real and symbolic mobility so that migration is not regarded, or practiced, as a once and for all departure or return but a state of continued connectedness and a continuous flow of people, communications, knowledge, networks and remittances in money and goods {see, egg,}. Both mobiles and – potentially – the Internet can maintain both connection and a sense of connection, and reduce the costs and problems of coordinating transnational and trans-Ghanaian relationships. The motivation of Twifo Praso district assembly to establish an Internet and computer centre in order to retain and attract teachers and civil servants to a currently remote posting is eminently plausible, but needed to be conceptualised more thoroughly in terms of migration issues than hardware access or computer training.

Secondly, there are straightforward economic and commercial aspects to using ICTs to develop North-South connections for poverty reduction. These included reducing the cost, time-scale and hassle of managing remittances, coordination and transportation, and increasing the ability to source goods and make payments. Some of this simply requires guidance in how to make effective use of ICTs (rather than reliance on word of mouth, which is often wrong or is blocked by the issue of scamming). Some requires public and public-private initiatives to devise online payment systems and other financial devices (egg, payment by prepaid cards, already well understood from mobile phone

use). In both cases, such moves would be highly popular, readily understood as practical and beneficial, and again lay foundations for more innovative use of ICTs.

Thirdly, while so much current Internet use reflects idealized constructions of global connections there is scope to structure these motivations and practices in more complex and expansive ways. One practical example is the online twinning of Ghanaian and British schools (through Sussex University and British Council schemes {ref websites? and Sussex papers}). Through online interaction and web based multimedia representations of life in both locations, students can develop more continuous and developmental relationships with people and places abroad, can expand their Internet use from chat to other technical possibilities; and can begin to integrate new information channels into their schoolwork and broader education.

Conclusion

Ghanaian Internet and mobile phone use are divergent but rationally connected extensions of existing and long-term livelihood strategies. These strategies have, unsurprisingly, framed everyday understandings and practices of new media: Ghanaian Internet use projects an ideal realization of that obligatory reciprocity – to be achieved with foreigners – that is imminent and ambivalent in those relationships with family and friends that are practically managed through the mobile phone. The generally unrealized ambition of moving an Internet chat with a foreigner from ephemeral and random conversation to a relationship involving money, visits, gifts, visas, connection, friendship, marriage, etc is more than attempted scam; it is a utopic familialization of relationships with strangers in order to secure the structure of obligation and reciprocity that is normative for local and embedded relationships.

If this analysis is correct, we need to understand how Ghanaian Internet and mobile phones point us towards two quite divergent – even diametrically opposed – extrapolations from underlying concepts of 'a relationship' or 'connection', and of how these are to be managed and mobilized as ambivalent structures of resource and obligation, advancement and demand. The very idea of convergence between the two media – on this basis – would require the closing of a gap that is not between two technologies, or two uses, or two institutional structures, but rather a gap between practice and fantasy, between embeddedness and escape, between long term, complex obligations and a fantasy world of 'something for nothing', of gain without enduring obligation, of a kind of freedom by which non-African modernity is often understood.

Finally the picture we have painted points towards highly consequential disjunctures between local understandings of new media, on the one hand, and policy and academic understandings on the other. This pictures asks that we detach the potential relationships between ICTs and poverty reduction from global and abstract generalizations about information society and about information goods. Instead, it asks us to attend to the assemblage of communicative means and social networks that is in actual fact being constructed through everyday practice. In plain speak: if we want to get anywhere we had better start from where we are.

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Endnotes

[i] *Acknowledgement*: This paper is indebted to material provided by Jenna Burrell, as well to extensive discussions between the authors and her.

[ii] It is not uncommon for those with chat 'penpals', particularly more long term ones, to want to phone these partners or to receive calls. When accomplished, the calls are generally brief (because of cost), with a minimal content not dissimilar from online chat conversations (Jenna Burrell fieldnotes). This desire is entirely consistent with the argument presented here, as well as Slater's (1998, 2000, 2002) concept of 'progressive embodiment': chat users have an understandable desire to

concretize and realize online relations by progressively embodying partners through additional media and sensory channels, with face to face interaction as the gold standard of authenticity in relationships.

[iii] The argument, and example, in this and the preceding paragraph are heavily indebted to Jenna Burrell's fieldwork.

[iv] One exception in Burrell's work were users of Internet cafes at the University of Ghana at Legon, whose use largely comprised information search, course related work and maintaining communications with family and friends.

Appendix 12: ISRG Working Paper 5

ISRG

Information Society Research Group
Working Paper No. 5

The Jamaican Internet:
Supply, Demand and Education

Heather Horst and Daniel Miller

June 2005

Information Society Research Group (ISRG)

ISRG is a UK Department for International Development (DFID) funded university consortium that comprises University College London, Queensland University of Technology, The London School of Economics and The University of Adelaide. The research group draws together institutions and researchers with an interest in producing qualitative insights into the digital divide and processes of communications for development.

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The Jamaican Internet: Supply, Demand and Education

Abstract / This paper describes the presence of the internet in Jamaica. It attempts to outline and understand the way that the internet has (and has not) taken shape throughout the country, with particular attention to the role of the government, corporations as well as NGOs have structured the possibilities for the internet and how, in turn, Jamaicans have responded to the availability of internet and computer resources in schools, free and NGO sponsored sites as well as public cybercafes. These findings are intended to provide the backdrop for the more focused concern with the lack of demand and its implications for policy that are outlined in the second working paper in this series (Miller and Horst 2005).

Keywords / Internet, Infrastructure, NGOs, Education, Jamaica.

Introduction

In considering the overall impact of ICTs on low-income Jamaica, there is a rather remarkable contrast between the rapid appropriation of the cell phone — where in the space of a few years the country reached its current subscription rate of two million out of a population of 2,600,000 — and the internet, which appears to remain very much in the background to the story of modern Jamaica. An extended recent survey by JAMPRO, a Jamaican government agency established to encourage international trade allows a reasonably accurate portrait to be drawn largely of the failure of the internet to gain much headway. According to the Jamaican government export agency JAMPRO (2003), there are only 70,000 internet connections in Jamaica; private connections account for less than 3% of the population. Half the connections are with Cable and Wireless, the main incumbent telecommunications company in Jamaica and most of the Caribbean, and the rest of the subscriptions are registered with half a dozen smaller companies. It may well be the level of usage in Jamaica in 2004 is still less than that reported by Miller and Slater (2000) for Trinidad in 1999. This is notwithstanding the 45 licences held for Internet provision and 14 ISPs (Internet Service Providers), which include five that offer broadband.

A report by the Allen consultancy group (Allen 2002) attempted to assess the potential for e-commerce within Jamaica. The report suggests that only 9% of companies had internet access and less than 2% possess websites, which implies that commercial access is not much greater than private access. These figures are similar to the more recent JAMPRO report. Not surprisingly, the most developed sector by far is the tourist industry with accommodation, travel, and transport readily on-line and considerable opportunity for on-line booking. Similarly areas that cater to the tourist industries typically provide cybercafes and other public access portals set up largely for tourist use. They also stimulate greater local usage. But just as there is a general question of how much of the profits of this sector are retained in the country, it also is relevant that most of the Jamaican web-sites are hosted outside of Jamaica. Still, since tourism provides 13% of GDP, or 45% of foreign earnings and 8% of employment, the web presence is an important one. There is a similar situation with regard to the Jamaican music industry, apparently buoyant with considerable interest and enthusiasm coming from abroad. By our calculation there are at least 750 websites in operation which concentrate on the Jamaican music industry, but as yet little capitalization by Jamaican companies. The Allen Group report suggests that the financial services sector has been particularly conservative and unadventurous, even by comparison to other Caribbean countries due in part to a banking system that makes it difficult for businesses to facilitate the cross-currency and credit card payments that would allow greater international trade based on the internet. While there are credit cards which now can be used in Jamaica, the sector has rallied little support for Jamaican dollar based credit cards that can be used internationally.

In effect, surfing the `Jamaican' web is often in effect surfing the presence of the Jamaican diaspora, though the distinction is a blurred one. To illustrate, Top5Jamaica was developed by Sandor Panton who left Jamaica in 2001 and currently works for a small internet marketing company in Canada. Panton (pers. com.) began the site as part of a MSc. Programme at UWI (University of the West Indies) in 1997 and decided to post it live) on the internet at the end of 1998. By mid 1999 the website was generating such serious traffic that Panton decided to register it and develop the site further. Much of this enterprise involved, searching for sites on Panton's own time and money. By 2004, the site wielded approximately 8,000 unique visitors per day, although most of the traffic was

derived from Jamaicans living abroad and foreigners seeking information about Jamaica. Approximately 70% of Top5's visitors are from North America (USA and Canada) and the United Kingdom. Notably, Top5 now attracts enough advertising to pay for itself.

Cable and Wireless (henceforth C&W) are the dominant ISP. Both C&W and Infochan (the oldest ISP in the country) have points of presence in every parish which allow local rate dialing. A report cited by another consultancy group Marengo (2004) suggests that with regard to private subscriptions, 45% of users are men and 55% are women, which our sparse ethnographic data would seem to support. But what our ethnography makes clear is the remarkable difference between Jamaica and many countries of significantly lower income levels. While even quite impoverished developing countries seem to have internet cafés at every street corner, in Jamaica they are comparatively non-existent. There are perhaps six in the main areas of Kingston either established by NGO's or mainly patronized by visitors. In Portmore, a dormitory suburb of Kingston (and one of our two fieldwork sites) there are three commercial and one NGO based internet cafes for a population of 200,000. Outside of Kingston, most internet cafés exist only in parish capitals, such as Mandeville, and tourist resorts.

Blame for this lack of development is often laid at the door of C&W and more specifically their pricing structure. The most cited cause of the lack of private internet access is quite simply that C&W continue to charge users a per minute telephone charge for dial up access in addition to the flat rate internet charge. One report in the IADB document (2002) suggests that someone wanting extensive use of a dial up service could well end up with a bill of over US$100 per month for the privilege. Those who desire broadband could pay much more. In 2004 C&W radically reduced its monthly ADSL charges for access. These now range from $US60 for a private 265k connection to US$500 for a business connection of 1,544k. Even by international standards these remain prohibitive. Perhaps more problematic is the difficulty of making a business plan for ISPs and cybercafés. As one cybercafé owner noted, "when companies are paying C&W $US800 for an IP address that would cost US$8 in the US, it is not surprising that the common name for C&W amongst its competitors is `rape and pillage'."

Indeed, it seems the whole country is waiting for the completion of the promised new cable in 2006 (the license was issued in 2005). Currently all access is via a fibre ring constructed by C&W, which has been continually enhanced since 1992, but which in 2004 C&W itself stated to be operating at full capacity. While Jamaicans patiently wait, a current alternative might be the provision of service through the many cable TV operators, which have a strong presence throughout the island. The cable television companies could take their broadband directly from satellite and deliver service via their own cable, which enables the cable companies to bypass C&W altogether. Unfortunately this is not cost effective from their perspective, since according to operators taking broadband from satellite can cost twelve times that of deriving broadband service from cable. For example, Entertainment Systems offered broadband between 2002 and 2003, but discontinued their service after one year due to limited subscribers and infrastructure problems. Others cable operators are contemplating such schemes at present.

Another problem is the overall structure of cable TV provision. The Jamaican government divided the island into quite small areas and each area is serviced by two competing licensees. As a result, the companies that operate cable TV suggest it is almost impossible to make any kind of profit from such small units given the constant undercutting by rival companies. There is a sense that there has to be some consolidation in the industry. Only then do economies of scale make commercial sense and place one or two companies in a position to make more of both cable TV and internet provision in the future. Today there are said to be some 52 licensed companies involved, although cable TV itself has grown by 120% from 1998-2002.

Media professionals have been proclaiming the potential for voice over telephony for years. A device called a Yapjack promises to facilitate voice over telephony (VOIP), allowing calls to be made at a fraction of the cost of using a cell phone. To date, the subscription to this service remains very limited, which is admittedly confounding the companies offering voice over telephony; they cannot understand why a device costing $US125 which drastically reduces the expense of the 150 million minutes of calls that Jamaicans make abroad each year is not more popular. This may reflect the reluctance to take up the internet more generally in Jamaica. On the other hand, Jamaica is hardly unique in terms of the lack of appropriation of such innovations like Yapjack. At the time of writing, the phenomenon of SKYPE has emerged as a presence on the international scene and may be fulfilling something of this promise that VOIP has been beckoning for many years. The impact of SKYPE in the first instance builds upon a backbone of ubiquitous presence of computers, i.e.

relatively wealthy countries. By contrast, for a country such as Jamaica, the impact would have to be the other way around. Here it is a question of whether SKYPE will drive demand for computer purchase, rather than ride of the back of a previous distributed hardware. Although with marked differences between the US, UK and Japan in the take up of such technologies, it is hard to predict the impact on Jamaica.

NGO Activity

In order to develop some sense of demand for the internet as separate from the issue of high costs of access, the best evidence comes from the activities of various NGOS who have been providing either free or heavily subsidized internet access as part of development programs. These are limited. Although there have been a number of NGOs which have helped schools in Orange Valley (our rural fieldsite) obtain computers, there was no evidence of any sustained NGO activity in the Orange Valley with respect to ICTs. In Portmore, however, there was a cybercafé that had been funded by UNICEF in the Edgewater area which opened in July 2003. In its first month, the free cybercafé attracted 308 users. By July 2004, visits had grown to 1160 users and the site was close to capacity. The cybercafé was housed in temporary building, similar to a container or the back of a trailer. It contained 8 computers all with broadband internet connections for general access and one for the three staff workers. The cybercafé was open from 0900 to 1800 Monday through Saturday and users were permitted to remain on a machine for one hour. If at the one hour point there were others waiting to use the machine, users were required to give up their machine. If there was no one waiting, they could continue. Officially, users were required to be between the ages 8 and 34. Although the age limitation was probably not being monitored carefully, most of the users were within the age parameters. An important part of the success of the site was the free training offered on Saturdays as part of several youth training schemes based on this site and there were usually around sixteen people at each training session. Even though many students received some exposure to computers and the internet at school, most children needed this additional training to feel comfortable about going on-line. The cybercafé was never advertised publicly, but news had spread by word of mouth and although most users were quite local some were from more distant parts of Portmore.

Compared to a commercial cybercafé, usage was quite restricted in terms of content. The computers were arrayed on the sides of the room in such a manner that anyone there could see the activity on any of the screens. A side-effect of this layout was that users had little privacy. The rules stated clearly that there could be no visiting of pornography sites, no downloading of music and no playing games. As a result, the main use made of the machines was for emailing. After email, users used the computers for research, including homework and looking up courses and scholarships abroad. The staff strongly encouraged such worthy usage. For example, they guided users in formulating their CV's, which were printed out for free and they also provided material for courses at US colleges.

This particular Portmore cybercafé was the only example found of an entirely free internet resource in Jamaica, even including free training and free printing. Two main lessons emerge from this experiment. First, even an entirely free internet site was not flooded immediately by young people able and wanting to use the facility. It has taken nearly a year to reach its capacity and much of that involved training and giving people gradual confidence to make best use of the internet. On the other hand, it certainly demonstrated that over time demand could rise and that even machines which did not allow for the most popular surfing topics and did not provide possibility of downloading these widespread features, could still sustain capacity usage for what are generally seen as useful activities such as writing CVs and general emailing. But what this example cannot tell us is whether this usage would be sustained if the access was not free.

Limited NGO activity also exists in Kingston. The cybercafé established in Half Way Tree, one of the most important transport connections in all of Kingston, is a commercial project, but is supported by the Sustainable Jamaican Development group. In addition, Zinc Link which has been developed by a catholic priest Hugh O'Reilly under an international NGO program called Mustard Seed, targets low income areas near another central transport junction called Three Mile. This is primarily directed at children in some of the most difficult and dangerous areas of downtown Kingston and includes some innovative additional ideas, such as virtual `counseling' between Ireland and Jamaica as well as educational games. But again such programs work with intensive and sustained support, additional personnel and external finance. As a result, it would probably be completely misleading to try and extrapolate from these sites. Indeed, as we mention below, these NGO based projects need to be set

against other experiments, before reaching conclusion on the basis of their impact and we therefore do not see these as a guide to the prospects of `stand alone' internet development in the future.

The Jamaican Government

The Jamaican government has developed a number of initiatives in the ICT sector over the years, particularly under the reign of the current Minister of Science, Commerce and Technology Philip Paulwell who has taken a personal interest in this sector and invested something of his own reputation in the success of failure of these ventures. An important part of Paulwell's movement has been the Telecommunication Advisory Council, which has responsibility for the development of the legislative element of this program and the formulation of the wider strategy. In 2001 the government established CITO (the Central Information Technology Office) as the body responsible for implementing its' ICT program. In this instance, the government (rather than commerce) remains at the forefront of the push for internet development, including the negotiation of international credit card and electronic payments in suitable sites (post offices) and ensuring the necessary background legislation according to international standards (Ministry of Commerce, Science and Technology 2003 Electronic Transactions Policy). CITO is also trying to deal with macro issues such as standards for government websites and security

One of the key drivers for the current move to expand public access is e-government, which CITO has been keen to promote. For example in 2004, as part of the inter-American Development bank loan initiatives, the Jamaican government developed a system for payments on-line, which included tax payments, traffic tickets, consumption tax, taxes for betting and property and several fees relates to cars and licenses.There are a number of current initiatives, for example Jamaica Customs, the Tax Authority and the Office of the Registrar of Companies, which are attempting similar e-government programmes. Perhaps the most successful of these is Customs Brokers, which brought together the various clearance forms online. This streamlined the entire process, which included payments to be carried out remotely, and is now credited with almost doubling revenues within twelve months of the scheme's introduction. A trade point service launched by JAMPRO is also simplifying the many forms required for export and import.

The potential for cell phone involvement in e-commerce was also being considered. For example, an agreement was made with the three mobile providers to allow the government to send text messages with `tax alerts' to the public. Certainly irrespective of anything to do with ICTs, there are grounds for reform here. The ethnographic encounter with individuals who deal with government bureaucracy, personal experiences of this bureaucracy over the years as well as interviews with individuals working in and with the Jamaican government suggest that these encounters are something of a nightmare -- forms needing stamps, signings and counter-signings and people who have made long journeys from rural areas where the transport is a problematic cost, being told to come back in an unspecified number of days to check on the next stage in the processing of some form or other. There are some grounds for thinking that computers may start to look quite attractive.

Most of the government initiatives to provide better facilities and training have been collaborative projects with either the private sector or aid institutions. USAID has assisted with the formulating of new legislation and DFID helped develop the Office of Utility Regulation which has had a particularly active and critical role in the development of telecommunications in Jamaica. UNDP established the JSDN (or Jamaican Sustainable Development Network), which was prominent in establishing plans for `community' computers. In general terms however, one has the impression that government is starting to perceive a general split, where the private sector is seen as having created universal voice access through the sales of cell phones thereby leaving the government with responsibility for developing data, such as through the Universal Access Fund.

ICT Employment

The direct potential of the ICT related industries for furthering employment has been one of the main planks upon which Minister Philip Paulwell has attempted to justify the claims that a significant percentage of government revenue should be spent in this area. It is likely this was helped somewhat by the very large sums of money raised through the auction of licences, for example, for the cellular systems. A major plan by INTEC promised that there would be 40,000 jobs created in this sector by 2003. This turned out to be something of an oversell. One of the more obvious examples of this push was the rise of ICT based service industries in export processing zones (EPZs) geared to data processing, call centers and the like in places such as Montego Bay and Portmore, although the

success of these industries have been patchy. Some EPZs failed over high rentals and two companies, Netserve and Pathway, went bankrupt after establishing their businesses in these preferential facilities. But others, such as E-services, Bay telemarketing and Caytech, appear to be developing. Actual job figures vary hugely. The most quoted in this sector is 13,500 (*Gleaner* 11/2/04), but according to Datamonitor a more accurate figure may be around 11,500 for the whole ICT industry (IADB loan document 2002), with around 5,000 in this export zone call centre area (Observer 13/8/04). There are approximately 1,000 jobs in Portmore itself. While this may not look like a success compared to the original plans, 5,000 is a high proportion of the 13,000 quoted for the entire Caribbean. In 2004 the government announced some 200 new licenses for various new ICT facilities and services (Gleaner 13/1/04) and they continue to see this as a major source of new employment. The CEO of the E-Services group based in Montego Bay and serving clients in the US claimed to have made profits of more than J$1.2 billion from its operations, and has increased its workforce to 1,200 following a US$5.3-million investment, and plans once a Kingston development is complete to expand to 1,600 employees (*Observer* 11/02/04).

As the Allen Group report notes, there are actually few grounds for optimism with regard to employment in the core ICT sectors of hardware or software development. This is mainly because of the sheer level of competition posed by countries with significantly lower labour costs for skilled personnel, such as India on the one hand, and the proximity to the US which can offer much higher salaries to skilled personnel from Jamaica. The government has tried to establish relevant training mainly through the Caribbean Institute of Technology which began teaching in 1999 in Montego Bay, although there has been an initial struggle to have the resultant qualifications recognized and some of the early graduates have found in difficult to find employment (*Gleaner* 23/06/04). The University of Technology (formerly CAST, College of Arts, Science and Technology) is also expanding teaching and degree programmes in this area.

The Plans for the Internet

The Jamaican government had already attempted to provide public access to the internet through collaboration with private companies. Grace Kennedy together with Western Union set up facilities in 44 public libraries and C&W set up kiosks in 30 Post Offices. We have not been able to find a report on the use made of these facilities, but our own ethnographic data suggests that they have completely failed to realise their intentions. Indeed, a post mistress reported that she had only seen one person attempt to use the kiosk the local post office in Marshfield since it had been installed. The local library, which housed three computers and charged for internet access at a rate of JA$50 per half hour (JA$60=US$1) , remained more optimistic. The library noted that the computers tended to sit fallow in the day but were used frequently in the two hours it stayed open at the end of the school day. However, few members of the community we worked in knew about the computers. Overall, the distribution of internet in public institutions has been particularly ineffective, with most of the machines lying disregarded and unused. Of course it is possible that this simply represents the excessive cost imposed by C&W on the use of the internet (and most individuals complained that the kiosk service was too slow and the cost too high). Yet, when combined with the evidence from the NGO experience which had difficulty in developing demand even in free sites and the lack of commercial cybercafés, it suggests that we must question the assumption that demand is simply there and waiting to be met (see Miller and Horst 2005).

Despite this presumption, the government is now heavily committed to a further attempt to create major expansion in the ICT sector. There has been discussion for some time concerning the possibility of taxing the telecoms companies in order to provide for a Universal Access Fund. Since the advance of the mobile has almost covered the entire voice sector even for very low income households, it is the internet that has been targeting for further development to be funded by such a tax. Discussion suggests that the tax should be between 2% and 5% of profits, but there has also been disagreement as to what this money might be used for, with groups such as the Telecoms Advisory Council and the Office of Utility regulations making different suggestions. In 2004 these plans started to concretize. The OUR (2004) released a document which, argued that `unlike single line voice telephony services, the Office is of the view that there is a clear need for regulatory intervention in the provision of internet access to public institutions'. The OUR favored priority for schools and suggested libraries and post offices should be supplied with equipment but be allowed to recover their costs. The bulk of the money should be garnered from a maximum 5% revenue taken from the telecommunications industry for the first two years.

Under a plan developed by the Ministry of Commerce in collaboration with the Ministry of Education, this money would be spent on revamping the education system to include a new system of textbooks and the broadcasting of best practice teaching through the cable system. The plan certainly reflects the reality of a Jamaican crisis wherein the school system is generally regarded as a failure and the single main priority for those concerned with the future of the country. Yet the link back to telecommunications is somewhat tenuous and their claim that this diversion of funds from commerce to the state as part of the development of ICT has really been transformed to simply a `windfall' tax proposal on the sector, which is therefore likely to meet considerable resistance. Elsewhere we have argued (Miller and Horst 2005) that it might be possible to create a more genuine dovetailing of the needs of telecommunications and education. Specifically, we argue that `virtual' teaching is probably not best suited to the primary and secondary school sector, but rather as part of the development of adult education for a particularly prominent category of individuals who possess a strong regard for career and other responsibilities in their late twenties. Because these individuals have missed out on basic universal educational provision, they would very likely be keen consumers of a virtual educational system. As such, it is possible to use anthropological work on the specifics of Jamaican social processes to argue for a specific policy targeting telecommunications to education.

In the meantime, the single most important venture entails an agreement with the Inter-American Development Bank (loan agreement 2002). This would include a loan of US$17 million plus a contribution from the Jamaican government of US$6 million. The terms of the agreement are now available online. The documents suggest that the loan was granted with little formal appraisal of previous projects. Furthermore, some of the statistics used to support the loan also look rather suspect, for example the claim that there were 100,000 internet users in 2002 and 600,000 in 2003. It is clearly worrying that lenders can commit such large sums, and governments can take on such large debts on the basis of such limited grounding and consideration of the likely effects and effectiveness of such initiatives.

There are three main elements in this proposal. The first and largest is in line with the programme being instituted by CITO to improve general e-government. Plans range from the provision of all land registration documents to the completion of on-line customs regulations and the feasibility of further e-procurement. The second element of the loan is directed training and the current focus is the development of a programme based in Montego Bay at the Caribbean Institute of Technology. This is one of the areas where money from the sale of cellular licences is intended to go into scholarships for students. The plan is to train 900 individuals over the course of five years, with the emphasis being upon high-school graduates who (generally) have lower incomes that the university graduates. In recognition of the critical problem of the brain-drain, trainees will post a bond to guarantee they stay in Jamaica for a period of two years upon the termination of their degree.

The smallest segment of the loan, but the one most relevant to this project, is intended to increase internet access and use within low income populations and thereby address the general digital divide. As the document states, `community access program provides connectivity but also training to the communities in their use of technology and funding to develop local, relevant content and will increase community access to the Internet in low-income areas by establishing 60 community access point sites throughout the country' (ibid: 2). There is provision for at least five computers per site, expanded to facilities such as desktop publishing and local training. The details show an ambitious programme wherein each centre must agree to 40 hours of operation per week of which 20 hours must be in evening and weekends. The facilities must demonstrate how they serve local community needs and incorporates local contribution and the plan predicts at least 1,200 users of these sites of relatively equal gender proportions. The plan predicts that at least 40% of users will have incomes below the poverty line and at least 35 of the 60 centres located island wide will be operationally self-sufficient after three years of operation. They also envisage a community outreach portal which is user driven.

There are some impressive sounding demands here, but the writing certainly suggests that these are intended as performance targets for auditing the scheme once in place. The ideas come across as very much a `supply-led' document, and as with so much of NGO driven policy, are based on a concept of `community' that bears little relation to the realities of Jamaican society or indeed aspiration. There is nothing in the ethnographic component of this work that suggests such community focused ICTs are desired or would work. The evidence for preference for cell phone over fixed line is just one of many circumstances that mitigate against any such conclusion.

Meanwhile it is sobering to read the five year strategic information technology plan for Jamaica that was revised in March 2002. This document also envisaged a rapid transformation in Jamaica's relationship to the internet and computing more generally, with a focus on the results of a decade of investment into computers at school, but also the widespread implementation of an early scheme for community access based on the libraries and post offices. But as already noted, the evidence for past performance of those sites that were created by this scheme does not bode well for the impact and implementation of future schemes.

Despite the evidence to the contrary, most government reactions to these facts highlight that the previous experiments do not properly test the waters because of the considerable cost of internet use. The government seems to have expected school access would be relatively affordable, but in general C&W still demand dial up access, often at a commercial rate. This is prohibitively expensive on current school budgets and the same may be true of the post office kiosk scheme. Similarly, even the cable companies are uncertain as to whether there is a business model that would justify the investment in internet through the cable. As noted by a Ministry media release, broadband cost US$93 per month in Jamaica but only US$12 in some Asian countries and there is uncertainty whether if the price was lower there would suddenly be the kind of demand that would justify the further expenditures. Another way this is being thought through is through predictions of the situation two or three years down the road. It is assumed that either through changes in legislation that bypass the current C&W bottleneck or though new cable company and wireless telecommunications infrastructures that can bypasses C&W in other ways, there will be considerable increase in available broadband. As a result, the government envisions a radical reduction in the entire pricing structure. Presently, access to a T-1 line costs many times the price of the same access in the United States. In other words, even if a test bed for such provision does not exist now, it is worth putting the infrastructure in place to be ready for when the demand and price make its presence worthwhile.

The other factor that might make a difference is greater attention to attitudes in the public and the actual usage, as opposed to the ideal of usage presented by government and the telecommunications industry. As an officer of the telecom advisory council put it, `We know the problems at the micro end, with the fibre cable and so forth, but we cannot understand why there isn't this great push or demand in terms of internet use on the micro end'. The question is whether better knowledge of current usage can direct and inform future provision.

The Impact—Education

During the 1990s there were two main programmes to try and develop computer usage and training in the school system. The first, called Ed Tech 20/20, was targeted at primary and secondary schools. The second, Jamaica 2000, was focused on secondary school and tertiary education. It also included a J$10 million loan to deal with Y2K which in Jamaica as in most countries may have been a global myth of millennial doom, but had the secondary virtue of updated infrastructure. In addition Cisco Systems provided support for private training in collaboration with the Jamaican computer society, a programme which was reasonably active at first but appears to have declined more recently.

Unlike the cell phone, where there has rarely been any particular claim that it would make a positive contribution to education, the Internet has been widely perceived as not just an instrument but also an educational aim in its own right -- that is to say that a child is not considered fully educated if they cannot use the internet or a computer. This seems reasonable not just because of the centrality of computers and internet to later entry into the work force and therefore a form of skills training, but also because it is becoming integral to the process of education itself. For example, it is replacing encyclopaedias and reference books as a primary source of information as well as a form of information technology becoming a recognized school discipline.

At present, however, unless a student is taking a typing or word processing course at the vocational level, many in Jamaica complete their education without ever taking a typing course. This includes students who take the information technology CXC exams. Rather, it is generally expected that students will learn typing skills by default during the course of their education as they type papers or participate in their annual computer course now mandated by the Department of Education. Interestingly, at Orange Valley Comprehensive High School students were discouraged from turning in final reports and papers typed on computers as teachers feared that there would be a significant degree of cheating and they could not be certain if it was the students themselves completing the papers. In effect, this is the same sorts of policies practiced in the United States and the United Kingdom where computer access is considerably more established. However, and has been reported

in studies of poor areas in the US where performance scores are consistently lower, this places students without access to computers in their homes at a severe disadvantage. In Jamaica, computer ownership per household is quite low and therefore students have precious little access to computers outside of the school yard. This is particularly the case in the rural outskirts of Orange Valley. As a result, students must rely upon the time they are provided in the computer class room as well as completing assignments by a particular deadline to learn vital typing and other computer skills. If then one argues that students need more access to computers, then this provides a clear argument for schools, the Ministry of Education and NGOs to make attempt increase the number of computers in the schools. But this only solves one problem.

In the early 1990s, the comprehensive high school in Orange Valley received assistance from Peace Corps, numerous alumni and the Ministry of Education to build and furnish a computer lab with 25 computers, an air conditioner and surge protectors. The computers were provided to facilitate the implementation of an innovative programme to reduce illiteracy in the schools by teaching students to read through the computer. The experimental programme and the progress of the students involved was meant to be shared and compared with other schools in the Caribbean. Later, more computers were added and Internet access was provided for the computer lab. However, in our interviews with students, only 10% of the students who were preparing for their CAPE exams had used the computer lab more than once in the past three months. In almost all the cases, their usage involved coursework in computers where teachers taught students how to turn on the computer as well as how to open up MS Word and Internet Explorer. Once on the internet, students were told what to type so that they could see what the internet looked like. However, none of the students reported that they ever spent time 'surfing' the net or that they were they allowed extend their computer knowledge beyond the few websites recommended by the teacher. In fact, their time on the internet was in some cases less than an hour over the past year, their time on the computer in a year less than two hours.

In fact most students who needed to have something typed preferred to pay certain students known for typing (or their skills writing papers) rather than venture onto the computer to type on their own. Given the small number of student time on the computers, one might 'explain' this lack of access to the small ratio of computers per student (80 computers to over 2,000 students). However, most days the computer lab remained locked and, outside of the formal class time, students were not allowed access to the lab before school, during lunch hour or after school for fear that "they would mash dem up" as one teacher explained. The computer lab remained in tact and relatively pristine. Students in our Portmore site also revealed that this was not atypical. In other words, the mere provision of computers is not enough to integrate computer knowledge and education. Students need more time working with computers to become proficient.

There are two ways that one can deal with this particular issue. On the one hand, greater access to computers in the form of reasonably priced internet cafes and library access is often proposed as a viable option for students and other computer users to have greater access to and gain knowledge of the workings of the computer and the Internet. Indeed, Miller and Slater's (2001) work in Trinidad reveals a widespread acceptance of internet cafes among squatting communities. Visitors to many developing countries with much lower incomes than Jamaica can also see the widespread acceptance and popularity of the Internet cafes for job seekers and individuals keeping in touch with family members abroad.

The other potential resolution to the lack of computers in close proximity was the idea of a small, private internet café organized by a member of a household who managed to acquire one or two computers and s/he could therefore hire out the additional computer for neighbours and others who lived in the area. This meant that there would be no transport fee to the café and it would be a relatively logical business proposition for people who were 'stuck' at home with children or without employment. In fact, and given the number of small shops, barbers and hairdressers that have been configured into the verandas and front rooms of people's homes in Portmore, we thought that the creation of an 'ends café' might be a viable alternative to the large scale internet café in the middle of Portmore. However, the idea was met with great pessimism.

Individuals who acquired computers in Portmore (often with the help of family members abroad) were sceptical of hiring out their computer for an hour or so to neighbours and friends for fear that they would 'mash dem up'. In addition, they felt that they did not want people coming into their homes and potentially getting mixed into their private business. In addition, they did not think that people would necessarily want to use the computer either out in the open on the veranda (in plain view) where other people could potentially see what they were doing. Rather, people with and without

computers preferred to have the person with the computer knowledge look up the needed information and print it out for the person rather than training them to look after information themselves, a regular practice in the neighbourhoods where families had acquired a computer. In other words, and unlike in Trinidad where people might gather around one computer to search the internet or music, Jamaicans did not view the computer or the Internet as a potentially community oriented activity.

There are a few aspects of Jamaican's relationship to the computer that may well explain this reluctance. In the first instance, Jamaica is an autocratic society the practice of shaming plays a large role in the educational system. Even in 2004 teachers return papers to students with such comments as "Adrian Bailey you dunce you. Where is page five?" or "oonu av no fadda?" (don't you have a father?) when a student forgets to put their name on their paper. This fear of shame and humiliation also informs their relationship with education and new things generally. For example, in the primary school classroom students who were not given the opportunity to go to the board or answer questions preferred to have students identified as 'the bright ones' perform in front of the class and this pattern of allowing the person who knows how to do things to continue to act on a person's behalf.

Even when they had the opportunity to use a computer, people talked about not wanting to break something or make a mistake and others mentioned that they did not want to look like a fool. In fact, one of the young men in Portmore we interviewed reported that he had approximately 15 persons who he looked up information for within the past year and of those 15 he admitted that he would only allow about three of his friends (fellow students at his tertiary institution) to use the computer when he was not monitoring their activities. The individual receiving the information is expected to receive the information graciously and without question. No one asks if the computer monitor looked in all of the relevant sites and only in the case of a family member or close friend might one suggest that they will teach the person how to use the computer or the Internet. In effect, the proficiency at the computer is more about performance and looking knowledgeable rather than a proven proficiency and those without computer skills could describe the way that those who were comfortable with the computer just sat up right to it and started using it. These same sorts of comments were made by adults watching their children used the cell phone or upper and middle class Jamaicans marvelling at know-how of the uneducated to use the cell phone. The public computer could result in others become aware of your lack of knowledge and proficiency, opening the person to a world of ridicule and criticism. Even in a semi-private location, such as the bedroom of a friend, it was assumed that your friend would gossip about one's inefficiency.

It is not therefore the inability of students to be able to use a machine perceived to be difficult or complex. Indeed, the cell phone itself is not a simplistic device and students appear to be well versed in the complexities and intricacies of cell phone use and, aside from adults who admitted to 'fearing' the technology and had their children and grandchildren 'teach' them to use the cell phone, students and young people often 'played around with' the cell phone without use of a manual. There is no apparent reason that the same could not be achieved with the computer and the Internet. The question is, however, how do we address the particular issues that dominate Jamaican attitudes to the internet, computers and learning more generally?

Conclusions

We started this paper with the contrast in the rapid acceptance of the cell phone as against the apparently sluggish development of the internet. Focusing upon the impact on education, it seems that in many respects the internet proved to be less than it seemed while the cell phone is actually so much more than it appears to be. While the cell phone can look like an innocent instrument for retaining effective communication, in practice it becomes a toy that is also the hub of incessant social relationships, the girl and boyfriend relationships that are themselves best regarded as `playing' relationships, even though they sometimes have very serious consequences. But the vast network of gaming, flirting, status claiming and texting is belied by this little implement the phone. With the internet we have almost the opposite effect. The internet looks like it is promising the whole world, suddenly made instantly accessible to the enquiring pupil sitting there and desiring to be educated. It looks like every encyclopaedia, reference manual, textbook, interactive medium tailored to the precise speed of knowledge acquisition of each individual student. It looks like a teacher's perfect support and helper.

No doubt under the right regime with sufficiently experienced and appraised teachers present the internet can live up to at least some of the potential. But the critical point is the distinction between legitimation and actuality, between what it appears to be and what as a result of everyday practice it has become. In practice, the internet at school is none of the things it is purported to be. Indeed, the regime of computer use at school probably does a great deal to make sure it will never realise most of these possibilities thereafter. Because the `culture' of computer use, that is the attitude of the educational authorities, is such that the computer becomes assimilated into the more general form of highly conservative school pedagogy. This derives from an old more hierarchical and authoritarian tradition based on shaming and inculcating knowledge, such that the computer instead of being facilitating becomes intimidating. The computer does appear like a teacher, but rather a traditional Jamaican teacher, where knowledge has become authority and the pupil is largely exposed as ignorant.

The students experience the computer and internet as a privileged instrument they are lucky enough for the school to be in possession of and that must be guarded, secured and kept pristine as a kind of treasure trove. They are given access for short periods and under careful instruction that more or less mitigates against the single most important quality of the internet which is actually its unpredictability as a source of information and the way it leads us naturally down channels of enquiry we didn't expect to follow because we didn't know they existed or were possible. The internet is incredibly seductive, a click of the mouse sends us hurtling down strange unexplored paths, but these qualities requite an initial freedom to search and follow, and this is not permitted under the regime of control that makes the computer into the Jamaican teacher of old. So if the cell phone is transformed by practice into being so much more than it seems, the internet is transformed by practice into being much less than it seems.

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Summary Contents:

CHAPTERS:

PREFACE

On the evening of Friday 26th November 2004, an executive bus travelling directly between Half-Way-Tree (Kingston) and Portmore made its way down the congested Hagley Park Road. As the bus stopped at a traffic light near Three Mile (an area surrounded by many of Jamaica's crime ridden garrison communities), a group of four 'youths' brandishing an AK47 shoved open the door and boarded the bus[i]. The 'youths' ordered every passenger to place their cell phone[ii] in a black `scandal bag'. One by one the passengers passed up their cell phones, but when only twenty-six cell phones arrived the youths became angry and demanded that the remaining three phones be passed to the front — everyone knows that the executives are always full Friday evenings and thus carry 29 passengers! Eventually the 'youths' were able to coerce the three phones (as well as some money) out of the reluctant passengers and disembarked the bus without further incident.

Although we travelled this very same route to Kingston on a regular basis in order to interview various government and company officials, fortunately this particular evening we had remained in Portmore. When we heard about the hijacking, its significance for our project was obvious, but became even more so over the course of the next month as the event transformed into urban legend. When a woman in the audience of a workshop we presented at the University of the West Indies recounted the story, some of the details had changed — one version added some violence, another mentioned some extra guns. But the story continued to travel and capture the imaginations and fears of residents across Portmore and Kingston, not only because it signalled what many predicted would be a bad season for crime in the aftermath of Hurricane Ivan, but because of what it said about the cell phone — whereas just a few years ago many low income Jamaicans had little access to any kind of phone, these 'youths' could simply assume that 29 passengers represented 29 phones.

Our project, funded by the British Department for International Development (DFID), was one of four simultaneous ethnographies devoted to a general assessment of the impact of new information and communication technologies (ICTs) on poverty and poverty alleviation in Ghana, India, Jamaica and South Africa[iii]. As our contribution we carried out one year's (January 2004 to December 2004) research on the impact of ICTs among Jamaicans in two low-income communities. As anthropologists, we could not address poverty as something reduced to macro statistics of income and GDP and we were specifically concerned with documenting the experiences of individuals and households. We wanted to determine the extent to which communications were felt to be of value in their own right, and the degree to which they had become integral to peoples relationship to health, crime, other people, and their own sense of worth. It soon became clear to us, however, that the rise of the cell phone was the most dramatic story emerging from the Jamaican context in 2004. Furthermore, during the same year, urgent questions were being raised about the impact of the

phone throughout much of the world, so we also felt committed to telling this story rather quickly. The questions we were asking seemed just as relevant to China, South Asia and Africa. There is now a real need to document and understand the impact of this new technology as the basis for an informed response.

Even at a time when we constantly comment on the speed of globalization, there is something special about the cell phone. By 2003, there were already more cell phones in the world than land lines. In many European counties more than 75% of the population were subscribers. China is by far the biggest market with 200 million subscribers, although notably this comprises only 16% of the population. The Caribbean country of Martinique, much like Jamaica, has 78.9% penetration compared to the US with only 48% (Ling 2004: 13-14). Because many non-metropolitan countries did not have household land lines, the entrée of the mobile phone represents a renewed opportunity for anthropologists to consider the overall impact of telephony as a form of communication analogous to the original introduction of the phone within metropolitan regions nearly a century ago. These differences in access form part of what has become termed the 'digital divide', that is the possible tendency of new technologies to exacerbate differences between the rich and the poor. The jury remains open as to whether the spread of the cell phone represents a symptom or a solution to the digital divide, which made this question central to our research. Indeed, each year the questions build. In 2005 journalists and policy makers ask whether it will be internet through the phone, rather than internet through the computer that will have the greater impact on low-income populations since, after all, phones are a great deal cheaper than computers?

For example, just recently *The Economist* magazine (12-18/03/3005) devoted its front cover and lead editorial to the possibility that the cell phone, rather than the internet, was the key technology for helping populations move out of poverty. As we hope this volume will demonstrate, trying to assess the relative merits of new communication technologies in alleviating conditions of poverty is no simple matter. And the answer to these questions is not likely to remain the same across every region. Nonetheless, our hope is that this volume makes a considered contribution to an important, ongoing and essential debate for those of us for whom social science is intended to contribute not just to academic advancement but also to understanding contemporary issues that effect billions of people.

At a theoretical level our primary aim is not to make a major contribution to debates about the adoption of media in general. Yet, we do draw upon some of the theoretical insights derived from research on media, particularly new media. Ling (2004), for example, provides one of the most thoughtful texts attempting to assess the literature concerning the impact of the cell phone to date. Following Silvertone and Hirsh (1992) and Silverstone and Haddon (1992), he argues that the evidence to date supports an approach termed the `domestication of technologies', which was devised in order to move beyond arguments between various forms of technological determination and social determination. Several of the terms and ideas employed in this approach, such as appropriation and objectification, were adopted and adapted from Miller (1987 and 1988)[iv] and, in the main, this is the approach we also adopt here.

While Ling (2004) summarises much of the initial research on the cell phone, Fischer (1992) provides a general appraisal of the social impact of the original land-line phone in his case-study of the US between1900 and1940. Fischer concludes that "the telephone did not radically alter American ways of life; rather, Americans used it to more vigorously pursue their characteristic ways of life" (5). This sentiment conforms closely to that implied by the expansive realisation', one of the four terms that Miller and Slater (2001) proposed could be used for examining the process of media adoption and thereby extending this approach to domesticating technologies. In essence our approach to this process of objectification means that we do not imagine ourselves as studying the adoption of objects by subjects, because there is no fixed thing called a cell phone or fixed group called Jamaicans. Rather, this book will seek to find out what Jamaicans have become in the light of their use of the cell phone and what the cell phone has become in the light of its use by Jamaicans. It further recognises that there are many types of cell phones and many more differences amongst Jamaicans.

Instead of theorising media adoption, this volume concentrates on other issues that seem much less settled in the academic literature. Some of these are analytical questions, such as the nature of social networks or coping strategies. A more consistent theme is that of evaluation which is the explicit concern of the final chapter of this book. The actual policy recommendations that are intended to justify the funding of this research are being published elsewhere (e.g. Miller and Horst 2005), but the issues involved in turning an ethnographic account into the substance of evaluation

dictates much of the content of this volume. It also explains why much of what follows is as concerned with thinking about and documenting poverty as it is about considering and documenting the cell phone.

Most of the initial work concerning the cell phone has been published with titles such as *Perpetual Contact* (Katz and Aakhuus 2002) and *Wireless World* (Brown, Green and Harper 2001). Because these studies have emerged from metropolitan regions where the landline was already ubiquitous, they seek to highlight the significance of the cell phone as a *mobile* phone. By contrast, this volume is sub-titled *an anthropology of communication* because there is no intention of isolating the cell phone's unprecedented attributes of mobility at the expense of its more general integration into Jamaican life as a phone. On the contrary, we would rather use this opportunity to think more generally about the nature of communication as a value and practice.

Fischer (1992), therefore, is a useful precursor precisely because he was concerned with the meaning and the use of the telephone per se (Cf. Marvin 1988, Umble 1996). For example, one of his most important observations is that those who marketed the phone were actually quite slow to appreciate that it would be largely used for sociable conversation (85). If anything, the people who `invented' the telephone were consumers, especially rural consumers, who were the most keen to obtain the phone and appreciate its potential (119). Overall, and in contrast to the car, there was little public debate about its impact, and it had little impact on localism in small town life. He discerns no obvious or major social or psychological impact, and `the best estimate is that, on the whole, telephone calling solidified and deepened social relations' (266), rather than replaced face to face relationships. What the telephone appeared to engineer was a general expansion of talk (268).

This work is also complemented by that of Ling and others who have tried to evaluate the initial effects of the cell phone in its guise as a particular kind of phone (complemented by various works on the specific history of the cell phone e.g. Galambos, and Abrahamson 2002, Agar 2003). Several of the themes in Ling's (2004) work will certainly be reviewed here, such as the increased sense of personal security and its importance, for example, in legitimating the giving of phones by parents to children, as well as its use in medical emergencies (35-55). Burgess (2004) adds a sustained analysis of the various scares and fears that have been associated with the spread of the cell phone. Many studies remark that the `ability to organise activities "on the fly" is, perhaps one of the most central advantages of the mobile telephone.' (Ling 2004:18, also Ling and Yuri 2002). Ling contributes a number of useful terms for analysing such micro-coordination such as `midcourse adjustment', `iterative coordination', and also `softening of schedules' which illustrates the ways in which the cell phone can be used to increase flexibility (2004: 70-76). More intriguingly he argues that as a result mobile telephony is starting to challenge the status of time itself as the basis of social coordination (78).

One of the most common research priorities, partly given the commercial imperatives behind much of this research, is to try and capture the imperatives behind youth adoption and use of the phone (Ling 2004: 83-121, Weilenmann, and Larsson 2001, Ito 2005, Kasesniemi and Rautiainen 2002, Taylor and Harper 2003). Ling takes these further, by examining both the general sense of emancipation and the implications of modern life where children don't expect to follow their parents practice and the insights of one generation are seen as less useful for the next (95). This focus on youth also tends to coalesce around topic such as fashion, style and the body (see also Fortunati 2002, Fortunati and Katz 2003), and the deep impact of phone costs on pocket money and budgets. Another associated theme is the impact of the phone on the internal relations within the family (Ling and Yuri 2002, Schejter and Cohen 2002), including the dynamics of surveillance and freedom between children and parents (Green 2001, Ito Forthcoming, Ling 1998).

Many papers have highlighted the intrusive nature of mobile telephony (Ling 2004:123-143) and the relationship between privacy and the dissolving of boundaries between the public and private sphere (Licoppe and Heurtin 2002), which in turn leads to a consideration of the etiquette that has grown up around the use of the phone (Kim 2002). Perhaps most striking to observers has been the rapid rise of texting, since this seemed to develop despite, rather than because, of the phones technological propensities (Ito Forthcoming, Ling 2004: 145-167). In this case the literature on young people in Scandinavia which focuses on texting as asynchronous discourse that anxious children can ponder conspicuously in groups as well as inconspicuously in class, or under their bedcovers, is matched by a fascinating literature on the Philippines. In the Philippines texting quickly became central to many activities, ranging from flirting and forming relationships to its possible implication in political mobilisation and the overthrow of governments (Pertierra et al. 2002, Pertierra 2005).

Most pertinent to the purposes of this volume have been attempts to forge a wider evaluation of the phone, often as part of a general debate between what has been called social capital on the one hand (e.g. Putnam 2002, Baron, Field, and Schuller 2000, Fine 2001) and the rise of individualization on the other (Ling 2004: 169-195, Beck and Beck-Gernshiem 2002). More specifically there has been vigorous debate about the degree to which social networking has become increasingly predicated on individual networking (Castells 1996, 1997, 1998, Wellman, 1999, 2002, Harper 2003). Given this controversy, as we will indicate, the particular configuration of communication between individual and social networking has such a different history in Jamaica, it is hoped that the material in this volume will make a considerable contribution to such debates, but largely by confronting them with the parochialism of their assumptions. We will show how (see Chapter 6 Link-Up), networking resonates with other aspects of social relations in such a distinctive manner as compared to the way these are discussed by Wellman and Castells that it becomes imperative to unpick these assumptions and to re-think the implications of the cell phone's integration within them (see Horst and Miller 2005).

The issue of social capital as against individualism leads in turn to the overall evaluation of the phone's impact on the welfare of populations, and thereby to the heart of this volume, which is a concern for the welfare of low-income populations. Again the most obvious context is the literature on the digital divide which today includes both divisions of wealth and poverty within metropolitan countries (e.g Hakken and Andrews 1993, Mossberger et. al. 2003) as well as more general issues of global inequality (e.g. Henry 2004, James 2003, World Bank 2002, Hakken 2004, Navas-Sabater, Dymond, and Juntunen 2002, World Bank GICT 2005), and poverty (e.g. Alcock 1997, Beck 1994) Although most of the work on the digital divide has been devoted to the assessment of the internet, it has clear implications also for the cell phone.

The situation that we encountered in Jamaica resonated with certain issues in the development literature more than others. For example, the role of the phone in linking transnational families and populations is critical to several of the chapters that follow and becomes integral to the general evaluation of the `remittance economy', and the role of communication in the vast spread of transnational migration more generally (e.g. Basch, et. al. 1994, Pertierra 2001, Riak-Akuei 2005, Smith and Guarnizo 1998, Thompson and Bauer 2000, Vertovec 2004, Wilding n.d.). We have also been influenced by the work of our colleagues on this project, who have developed a concept of `communicative ecology' (Slater forthcoming, Tacchi and Slater 2004). Their stance resonates with our commitment to a wider anthropology of communication in that they argue any one form of communication has to be understood as part of a larger communicative environment. For example, even in metropolitan countries it is important to situate the mobility of a mobile phone as extending and being extended by the mobility of the car (e.g. Jain 2002). In Jamaica we found again and again that the effect of the phone on welfare was mediated by its relationship in the first instance to the transport system as a system of communication.

In our final chapter we attempt to tackle these issues of evaluation in both specific and general terms. As a work of anthropology we are committed to a consideration of the way Jamaicans themselves evaluate, not just the phone, but each specific aspect of phone use, from its impact on relationships to its impact on entrepreneurship. But we also needed to find a way to relate this evaluation by those who participated in this study to that demanded by powerful bodies responsible for policy, whether the Jamaican government or The World Bank. One of our strategies is to compare our material with the approach of academics such as Amartya Sen (e.g. 1987, 1992, 1999a, 1999b) who have tried to take rather esoteric economistic models and make them instruments of welfare evaluation that engage with the declared interests and choices of populations. In our conclusion we try and highlight the dangers of focusing upon any one particular player in this story, whether commerce, the state, or the `popular voice'. Instead we concentrate on trying to make the relativism of anthropology, whose conclusions are highly specific to time and place, an asset in policy formation, rather than simply a critique of those generalisations required by policy making.

Finally, this problem of balancing an ethnography which is steeped in the everyday experiences with the need to examine more general conditions, such as the commercial provision of the phone and the nature of poverty, has influenced the order and structure of this volume. We decided to begin, somewhat against tradition, not with an introduction to the setting of our ethnography, but rather an example from the ethnographic encounter. Chapter One considers the cell phone in its relationship to the very specific Jamaican concept of `pressure'. In Chapter Two we do turn to the ethnographic setting, including a detailed analysis of budgets and livelihoods and the general conditions of poverty. We then devote Chapter Three to the story of how the cell phone became ubiquitous in Jamaica, and the role played by both commerce and the state. Chapter Four returns to the more mundane aspects

of cell phone usage in Jamaica, focusing upon the significance of the cell phone as an individual possession. This leads into Chapter Five which focuses upon the role of the cell phone in Jamaican social lives, particularly its capacity for networking. Chapter Six and Chapter Seven focus upon the economic and institutional impacts of the cell phone, ranging from its role in day to day economic survival and the receipt of remittances, to access to police, medical and other services. The final chapter attempts an overall evaluation of the impact of the cell phone on low-income populations, including an assessment of the different perspectives represented by the process of evaluation.

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[i] The use of the term 'youth' signals not only age but also has negative connotations associated with unemployed men engaging in criminal activities.

[ii] The term cell phone will resonate with US readers rather than with much of the rest of the world where the term mobile phone is more common. However, our choice of terms is intended to respect the conventions of Jamaica where mobile phones are usually referred to as cell phones (and sometimes cellular).

[iii] Our comparative results will be published elsewhere as will material on other technologies such as the internet. For interim results see the publications of the *Information Society Research Group: at* **www.isrg.info**

[iv] Our central premise of objectification remains however closer to that of Miller 1987 than the manner of its employment by Silverstone.

Appendix 14: Book Proposal: *A Suddenly Changed World: A Comparative Ethnography of New Media in Ghana, India, Jamaica and South Africa*

The research team has been in discussion with Columbia University Press, which has shown considerable interest in a book entirely based on the comparative analysis of the Information Society research project. Because these discussions have been recent and complex we have not been able to append a full proposal to this report. However, we expect to submit the proposal by August 2005.

The book will be organized thematically to integrate all country findings within comparative discussions:

Chapter 1: Introduction – Development and Communication

Chapter 2: Locals and Globals: comparative ethnography

Thematic chapters, each of which develops communications and media issues in relation to the themes that have emerged most strongly throughout the research sites:

1. Communication and social networks
2. Migration and mobility
3. Social welfare and health
4. Governance, states and communities
5. Social inclusion and exclusion
6. Enterprise
7. Markets, liberalization and infrastructure

Conclusion: Policy recommendations

Appendix 15: Book Proposal: *Connections in Disconnected Spaces: An Ethnographic Exploration*

The following book proposal has been submitted by the India team (Jo Tacchi and Tripta Chandola) to Sage India.

Connections in Disconnected Spaces: An Ethnographic Exploration

Jo Tacchi and Tripta Chandola

This book draws on ethnographic research undertaken between December 2003 and December 2004. Fieldwork has been conducted in two sites, an urban slum cluster in Delhi and a village and semi-town in Uttaranchal. Unlike many studies of the impacts of technological change which begin with a focus on the technologies themselves, this research begins with a focus on understanding the communicative ecologies of two 'disconnected' spaces. The slum cluster, while positioned spatially in the heart of a capital city and all of the technologies that are present there is nevertheless disconnected in many ways. Severe mobility restrictions (social, cultural, economic and spatial) limit the connectivity of the people living in this space with outside resources. Geographically distant from centres of power, the rural site is disconnected in different ways. Here both positive and negative implications of the city are seen as permeating the space through mediated channels of mass media, telecommunications and commerce. While greater connections are sought (better roads, power supplies, water and telephones) there are inherent processes in play which limit the ability of some to avail such facilities. Through this ethnographic study we are able to explore the characteristics of information and communication flows through the changing mediascapes in both spaces. With the current emphasis on the potential for new technologies and improved infrastructure to connect the disconnected, this research provides analysis of the situation from the perspectives of those who are disconnected – their desires, fears and imaginations of the possible futures that technological change and connectivity might offer them.

Chapter 1 introduces the research, the methodology and the sites. We outline the characteristics of both sites, and introduce some of the characters who live there. The mediascapes are described, along with an introduction to some of the complex ways in which each site is both connected and disconnected. We situate the book conceptually in relation to media and new media theories, development communication, modernity, media ethnographies and anthropology (both development and media anthropology).

Chapter 2 looks in detail at the domestic display and use of information and communication technologies, situating these within the communicative ecologies, needs and desires of households, families and neighbourhoods.

Chapter 3 looks in detail at the public display and use of information and communication technologies, situating these within the communicative ecologies of the two sites, comparing and contrasting the different needs and desires of the two spaces and the people living in them.

Chapter 4 interprets the research in terms of (dis)connections and imaginations. The focus is on the lived experiences of the people who inhabit these spaces, their everyday lives and communication and information needs.

Chapter 5 draws conclusions from the research, placing the findings in a wider discussion of the infrastructure available, the policies that influence that, contemporary communication and information technology changes and predict how this might impact on these spaces in the future.

Length: 70,000 words

Appendix 16: Book proposal: *Development, Globalization and New Media*

The following book proposal has been accepted and contracted by Polity Press, Cambridge

Development, Globalization and New Media

Don Slater, LSE

Perspectives on globalization and development have been preoccupied for some time with the centrality of new media, information and communications technology, and visions of information societies, networks and 'new economies' that are grounded in technological imaginations. The arguments of both proponents and sceptics are structured by claims that link new media to new economic practices, organizational forms and political discourses, and which are extrapolated to non-metropolitan countries as the basis for thinking through their developmental futures.

Despite this preoccupation, the conceptual bases for a sociological understanding of these processes is currently strewn across numerous disciplines and paradigms; moreover, different institutional parties to these developments (governments, academics, development workers, NGOs and global development agencies) live in disparate conceptual universes. The proposed book aims to bring together the dispersed debates on development, globalization and new media through a thematic review of central issues, grounded in case study material from a range of development contexts in the Caribbean, South Asia and Africa. This material, and the analytical discussions in the book, define 'new media' and ICTs broadly to include divergent configurations of internet, mobile phones, wireless technologies, radio and multi-media (particularly video, DVD and VCD).

The book is firmly rooted in qualitative and cultural analysis, arguing for the necessity of working outwards from local, ethnographic studies to more global generalizations. This perspective draws on the author's long term involvement in sociology of consumption, technology and media studies and the sociology of economic life. Moreover, as in his previous work, the author is concerned to bring the specific issues of the book into direct and sophisticated connection with the broadest concerns of social theory, rather than leave them to narrow and instrumental specializations.

Introduction: Diversity, development and 'culture'

This chapter introduces the main themes of the book, and situates the debates within the academic and institutional structures of knowledge around development, globalization and new media. It will then make a general argument for ethnographic approaches to these issues in both analytical and practical terms. Finally, the chapter introduces a critique of some contemporary uses of ethnography, which raises issues that frame the subsequent discussions: the case for ethnographic particularity has to be distinguished from a fetishisation of local difference and diversity, and from banal versions of 'culture'. The point of ethnographic studies of development and communications is not simply to establish that 'things are different elsewhere' or to assert the creative agency of the local; rather, the aim is firstly to build up higher level generalizations on a comparative basis (the largely unrealized originary ambition of anthropology), and secondly to open up potentials for new forms of practice and dialogue in forming 'technological futures'.

Communicative Ecologies: from 'impacts' to ethnographies

The first substantive chapter illustrates an ethnographic approach to development, globalization and new media by building up the concept of 'communicative ecology'. This term registers the embeddedness of media technologies in local networks of everyday life and communication. Rather than isolating the local impacts of generic technologies, researching communicative ecologies involves looking at the co-configuration of place and technology, and the assemblage of diverse technologies and communication networks into new systems and practices.

Development of this argument will involve a critique of models of media and technology impact; and the elaboration of perspectives from sociology of consumption, Actor Network Theory and science and technology studies.

Poverty, development and communications

In this chapter, the concept of communicative ecology is deployed to critique conventional models of the relationships between communications and poverty/development, and to test the limits of ethnographic perspectives that start from the local meanings and practices of communication, culture and economy. The chapter will particularly engage with, firstly, ways in which the connections between culture and development have been conceived; secondly, concepts of information and communication 'rights'; thirdly, global versus location-specific concepts of need and deprivation. In addition to a review of existing literature in this area, the chapter will also provide a critique of cultural studies approaches to these issues, focusing on the obsession with local and diasporic identity issues to the near-exclusion of the pragmatic contexts of development and communications.

Development futures and technological imaginations

Drawing largely on a critical engagement with material cultural studies in anthropology, this chapter looks at new technologies as idioms for articulating and negotiating images of the future and relationships between the local and the global. Partly because of the prestige metropolitan discourses in which they come framed, new technologies are a central means by which people in the south think through their futures (their own, their families', their communities', their nation and region) and seek to 'globally position' themselves. This chapter therefore looks at, firstly, new media as means of performing new social concepts; secondly, as a central basis on which people generate new livelihood and development strategies in specific locales; and thirdly, as a basis for re-imagining their 'place' in the world, spatially and temporally. The chapter therefore looks at how people 'think' globalization and development through the local assimilation of new media technologies.

Infrastructures – the political economy and the symbolic economy of telecommunications

While the previous chapter will largely focus on the local and community level (at least in case study material), this chapter develops similar arguments in relation to governance. New media emerged within a context of neo-liberalism and Washington consensus, on the one hand, and the commercial new age-ism described by authors such as Thrift and Frank, on the other. At the level of government and political economy, new media therefore also provide idioms for formulating national futures and national governance. This is particularly evident in battles over infrastructure, in which the regulation of such things as telecommunications and ISPs becomes the arena for settling accounts with colonial pasts, donor dependency, geo-political alignments and populist economic programmes. This chapter will draw largely on theorizations of the performativity (Thrift, Callon) and virtuality (Carrier, Miller) of the economy and polity.

Knowledge and legitimation – methodology, accountability and realities

Development, globalization and new media are pragmatically linked in the practices of specific social agencies (governments, businesses, NGOs). These institutions are explicitly concerned with forms of social and technical knowledge, methodology and the normative legitimation of their practices as both effective and intellectually correct. Moreover, the relatively recent vogue for ethnography and other qualitative methodologies implicates the perspective of this book (and the case studies on which it draws) very directly. Hence, this chapter considers the significance, consequences and parameters of sea changes in the knowledge and methodology base of the contemporary governance of development and globalization processes. It is also concerned with the linkages and flows of development and ICT thinking from the global to the local levels. The discussion reviews contemporary sociology and anthropology of global organizations with specific reference to the impact of 'new economy' and 'new media' models.

Globalization, communications and development

Although globalization is considered throughout the book, this chapter will explicitly engage contemporary debates on globalization. Specifically, it engages with claims about the capacities of new communication technologies to generate new forms of dialogue, mobility and development on a transnational scale; and the

ways in which these new forms might interact with global discourses on globalization. Finally, this chapter will include a specific critique of 'development communications', and other policy frameworks that seek to link ICTs and development.

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