



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

'I Don't Trust the Phone; It Always Lies'

Citation for published version:

Molony, T 2006, 'I Don't Trust the Phone; It Always Lies': Trust and Information and Communication Technologies in Tanzanian Micro- and Small Enterprises', *Information Technologies and International Development*, vol. 3, no. 4, pp. 67–83.

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

Information Technologies and International Development

Publisher Rights Statement:

This document is licensed under a Creative Commons Attribution-Noncommercial-Share Alike 3.0 Unported License.

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.



Research Article

'I Don't Trust the Phone; It Always Lies': Trust and Information and Communication Technologies in Tanzanian Micro- and Small Enterprises

Thomas Molony

Thomas.Molony@ed.ac.uk
Centre of African Studies
University of Edinburgh
Edinburgh, Scotland

Abstract

Despite its importance in African enterprise, the issue of "trust" is absent in information and communication technology for development scholarship. This article examines three case study subsectors of the Tanzanian economy to shed light on some of the complexities surrounding the sudden interface between traditional, established communication, and the increasing use of new information and communication technologies (ICTs). It seems from the case studies that, whereas mobile phones are indeed creating new forms of network in the twenty-first century, they are still far from being Africa's dominant form of network as Støvring (2004, 22) contends. The case studies reveal the overlap between social interaction and business in an African economy. Trust emerges as a common theme, and I discuss how important an issue it is in relation to the new form of communication that ICT provides for entrepreneurs in Africa. I suggest that, in relation to ICT in developing countries, trust might at this stage be separated from the more slippery concept of social capital that it is frequently associated with elsewhere. I then reflect on the implications of this for future research into ICT and its business and nonbusiness applications in developing countries. I conclude by suggesting that the need for direct, personal interaction through face-to-face contact—a traditional pre-ICT aspect of African business culture—is unlikely to change for some time.

Introduction

The uptake in Africa of new information and communication technologies (ICTs) in the form of the Internet and, especially, mobile phones, has been tremendous. Few technologies have been so widely embraced by Africans over such a short period of time; this, in turn, has spurred much interest in the potential of mobile phones as a driver for development (World Bank 1998; DOI 2001; UNDP 2001), primarily in terms of aiding enterprise. Unfortunately, much research looking at the use of these technologies focuses on the supply side and is either based on anecdotal evidence (that is of little analytical value) or centers on reports of often unsustainable donor projects that fail to represent typical situations for many ICT users. Although the Commonwealth Telecommunications Organisation

I would like to thank Giles Mohan (Development Policy and Practice, Faculty of Technology, Open University) and two anonymous referees for their helpful comments on an earlier version of this paper. The research was funded by a doctoral studentship (R42200134339) awarded by the United Kingdom's Economic and Social Research Council.

has recently completed a thorough study looking at the economic impact of telecommunications and poverty reduction across three developing countries (Souter et al. 2005), its findings are largely based on quantitative data and serve to feed what James (2005) regards as a voluminous yet fragmented ICT for development literature. The literature lacks qualitative research that looks in detail at different sub-sectors of the economy and assesses how individuals are managing to interact with other entrepreneurs now that new methods are available for obtaining information, and communicating. In particular, there has been little work done on the shape of interpersonal networks and the resilience of face-to-face communication in the light of these new technologies (Adeya 2005, 10).

This article presents qualitative results from fifteen months of fieldwork, during which I sought to trace how ICT is being integrated into Tanzania's existing business culture. In so doing, I consider the changes this had brought to the ways in which individual entrepreneurs are making money and consider a basic but important question: how important an issue is trust in relation to the new form of communication that ICT enables? I then reflect on the implications of this for future research into ICT and its business and nonbusiness applications in developing countries. I begin by outlining the growth in access to ICT across developing countries, and accounting for the importance of trust in networks of knowledge sharing among micro- and small enterprises (MSEs).

Growth in Access to ICT Across Developing Countries

Gloomy predictions of the impending Fourth World of structurally irrelevant "black holes of informational capitalism" (Castells 1998) did not anticipate the privatization of the telecommunications industry (Nielinger 2004) across much of the African continent. Nor did they anticipate the subsequent large-scale investment in ICT infrastructure in developing countries by domestic entrepreneurs who are working with international companies to serve an untapped market hungry for mobile phones and Internet access. Africa's mobile market, for example, has grown on average by 60% over the past five years. Dubbed "the least wired region in the world," the continent now has the highest ratio of mobile to total telephone subscribers on the planet

(ITU 2005). Telephony is now available for the first time to hundreds of millions of people in developing countries; even in the lowest-income areas people now own handsets and can privately subscribe to receive services from mobile phone operators. Many others use public access points such as phone kiosks that frequently crop up wherever coverage is available. Growth in telecommunications connectivity has allowed for wider access to the Internet in Africa, though, in general, those who take advantage of these services still tend to be the urban, educated elite (Mwesige 2004; Molony 2005; Souter et al. 2005; Mercer 2006).

While Africa will probably still remain largely irrelevant to the global economy for some time, the recent boom of a reliable ICT infrastructure in many African countries marks a massive improvement in the transformative potential of these information and communications technologies (Molony 2006). In much of the literature emanating from multilateral agencies that emphasize "knowledge societies" (e.g., World Bank 1998, 2000; UNDP 2001), this increase in uptake does indeed provide the opportunity to access international markets. At the *domestic* level ICT allows MSE operators to have more reliable communication and access broader sources of information than ever before. There is a growing body of literature (e.g., Donner 2004; Jagun et al. 2005a; Molony 2005) that shows how MSEs, a hugely important source of income and labor for many Africans (Biggs & Srivastava 1996; Rogerson 2001, 115; World Bank 2004, 39; Commission for Africa 2005, 239), have taken up mobile phones with vigor.

Networks for Knowledge Sharing and Trust

To MSE operators who have access to it, the massive growth in information that ICTs is making available in Africa and other developing regions calls for caution over the challenge of accessing and understanding the codified knowledge of others (Stiglitz 1999). A central tenet of post-Fordist discourse holds that rapid technological change requires life-long learning—it entails the need for workers to regularly "retool" their minds (Reich 1991). This ties in with flexible specialization theory, which is characterized by an emphasis on networking and enterprise relationships (King & McGrath 2002, 24). Meanwhile, tacit knowledge ("know-how" and "know-who"), the common forms of knowledge in

Africa (Dahms, 2001a, 1), remains vital in the localization of external knowledge for the success of African MSEs.

"Network" in relation to MSEs in developing countries is a term that is widely used but rarely defined. In the diverse literature on which this article draws, the use of the term can be relatively straightforward, such as a "local," "national," or "international" network, referring to the geographical reach of the people who interact with each other. Even this example is problematic. If a woman in a rural Gambian village has a businessman acquaintance in Australia with whom she occasionally trades, it is questionable whether her more local business contacts in the same Gambian village are part of an international network by association.

Of course, both the Australian and the Gambian will be in multiple networks, and networks can therefore overlap in terms of membership with some contacts being in more than one network. Their interaction may be as part of an "interpersonal" (sometimes taken to mean "face-to-face") network, and/or can be "online." (This nearly always refers to the Internet and rarely the telephone, despite widespread recognition that the mobile phone is a far more commonly used ICT in developing countries.) The network can then be "formal" or "informal," depending on whether it is recognized by the authorities (be they local, national, or international), and may variously be "organization," "enterprise," or "work" related.

In relation to MSEs in Africa, the "entrepreneurial network" is perhaps the most unclear of the typologies given that there is often a crossover between the "work" and "social" networks. Even though social networks may not always lead to sustainable economic growth (Meagher 2006), it is recognized that they can play a role in businesses where states and markets are weak (Pedersen 1996; Nadvi 1999; Stiglitz 2000). In geographical proximity to the research on East Africa presented here, for example, King (1996) has documented the collective efficiency of Kenyan informal sector manufacturers in Nairobi. Tripp's (1997) exploration of petty trade and informal businesses in Dar es Salaam demonstrates the economic (and political) importance and influence of "cooperative" networks for MSEs.

These studies are typical of many others that frequently refer to "networks" but do not put their finger on exactly what they mean by the term. In general network is applied in studies of socioeconomic interaction to mean just that: socioeconomic interaction. For the purposes of this article, it is helpful to offer a concrete working definition. Drawing on the influence of work discussed later by the likes of Granovetter (1985), McCormick (1996), and Lyon (2000), my working definition of a *network* is: "a face-to-face or distance relationship based on a mutually beneficial association between three or more individuals." It may therefore be applied to both business and social interaction.

When compared with the great advantages that some enterprises have derived from networks in other parts of the world (Liedholm & Mead 1999), the evidence that such networks have been beneficial to Africa is weak. A lack of trust between collaborating enterprises—a "neglected resource" in enhancing the competitive advantage of clusters or networks (Humphrey & Schmitz 1998, 57) and a critical aspect of network relations (Malecki 1991)—is largely to blame. In contrast to the enterprises covered by international literature, African MSEs are considered to be incapable of reaping the benefits of joint action, because they are distracted by issues of establishing and maintaining trust (Parker 1994; Barr 1999; McCormick 1999b; Pedersen 1999; Ishihara 2003; Fafchamps 2004), particularly trust over money and cash (Lyons & Snoxell 2005).¹

Trust refers to "expectations about the actions of other people that have a bearing on one's own choice of action when that action must be chosen before one can monitor the actions of those others" (Dasgupta 1988, 51). It can operate at the *minimal* (or "institution-based") and *extended* (or "long-term cooperative") levels (Humphrey & Schmitz 1998). Minimal trust is concerned with the fulfillment of explicit promises required for basic market transactions and must be in place for extended trust to develop. Extended trust is created when relationships require more complex interactions and interdependencies such as those found in supply chains and clusters. It is hampered when the institutional foundation for minimal trust is not in place. The difference between the two is one of de-

1. Recent findings from Lyons and Snoxell's (2005) research of informal traders in Nairobi do show the need and ability for trust in other areas.

gree. Minimal trust is a necessary but not sufficient condition for the formation of long-term (hence "extended") commitment to a relationship.

Much of the lack of trust among African MSEs has been attributed to the uncertainties created by an economic environment in which poorly functioning legal and judicial apparatuses regularly fail to sanction contracts (Murphy 2002). This can be because institutional practices are so complex that respective legal frameworks cannot cover all contingencies; no formal system of contracts exists in the first place; or when they have been exploited or maltreated people lack the contacts and know-how needed to transform theoretical laws into practical, protective measures. Because "organizational networks" (Karlsson & Westin 1994) are defined by contractual relationships (usually characterized by forward, backward, and horizontal linkages) that require an accessible legal system, entrepreneurs therefore tend to shun the shifting alliances that "weak ties" demand and that involve thin impersonal trust with strangers. They rely, instead, on what Granovetter (1985) calls "strong ties" based on ascribed or *earned* trust developed over long periods of time. This type of trust is located in more personalized relationships embedded in "entrepreneurial networks" (McCormick 1996) that are social in nature (Lyon 2000, 664) and that facilitate more than the informal enforcement of contracts (De Haan & Quarles van Ufford 2002). These relationships also allow for the sharing of information regarding prices, market conditions, and contacts, thereby leading to new business opportunities (Barr 1998; Fafchamps 1999, 2001; Fafchamps & Minten 1999; Duncombe & Heeks 2001, 4; Murphy 2002).

Social Capital

Taken together, trust and networks create social capital (Barr 2000, 539)—those social aspects of economic activities that essentially boil down to "who you know" or what ordinary language calls "connections" (Bourdieu 1993, 32). Some believe that these connections comprise a resource that can be mobilized when required. James Coleman (1988), for example, has argued that social capital is consciously developed and used to establish a framework to be drawn upon when the need arises. Both Pierre Bourdieu and James Coleman emphasize the importance of "the potential benefits accruing to

actors because of their insertion into networks or broader social structures" (Portes 1998, 18). By contrast, Robert Putnam, another of the concept's leading exponents, regards social capital as social networks and their associated reciprocity (1995, 2000), implying that it is both the network and its byproduct. Overall, social capital can be seen as the glue holding together cooperative economic relationships; it is the social interaction that underlies all such activity and, simultaneously, serves economic, social, and political functions (Szreter 1999).

Social capital can also serve a geographical function (Mohan & Mohan 2002). For example, Fergus Lyon's (2000) study of networks in Ghanaian agriculture highlights the extraeconomic, cultural expectations that underlie trusting relationships. These include "community" conceptions of reciprocity and obligation. In their study of gender and ethnicity in Trinidad, Lloyd-Evans and Potter (2002, 8) emphasize the role that community loyalty, along with trust and patronage, plays in supporting local salient networks that parts of the informal sector are built on in developing countries. Here, they note, informal entrepreneurship provides a salient starting point from which to study how social capital underpins the living standards of the poor.

Some posit that the rise of the social capitalist paradigm has actually turned social networks into a concept that conceals more than it reveals. In an article that explores the role of social networks in businesses across Africa, Kate Meagher (2005, 2006) argues that the essentialism and cultural determinism of social capitalist perspectives have distorted our understanding of the continent's informal economies by conceptualizing networks as "social capital," to the extent that they tend to portray them as "social liabilities" if they fail to promote economic efficiency and accumulation. Not only does Meagher direct attention to what she persuasively argues are the more institutionally sensitive network perspectives of "legacies, linkages and localities," she also offers a welcome break from the "sack of analytical potatoes" (Fine 2001, 191) that those interested in social capital are forced to peel through in order to make sense of the literature.

To be fair, social capital is still in the early stages of serious empirical investigation and we have yet to form a sense of its boundaries (Field 2003, 137), especially because researchers from disparate disciplines add to and increase the confusion of what

has been described as the “chaotic conception” (Warde & Tampubolon 2002, 177). Yet the risk is that, if researchers continue as Ben Fine (2001, 192) puts it, “adding one more damned variable” without acknowledging that as a result the other elements to which the contextual is added ought to be critically rejected or reconstructed, we are left with much rich data that is useful for a particular locale, but cannot be generalized. In light of the multiple interpretations surrounding the concept of social capital, I suggest that at this stage it is more helpful to concentrate on one of its less problematic, but certainly important, associates in African entrepreneurship: trust.

Social Capital in Developing Country Telecommunications

Social capital, let alone trust, is largely missing from telecommunications and development studies scholarship (Jagun et al. 2005b, 22). Contributions in this area are heavily biased toward the Internet (e.g., Norris 2003) and its use among development practitioners (e.g., Rohde 2004). They call for a degree of “analytical scepticism” toward assertions advocating the deployment of ICT for *creating* social capital (Pigg & Crank 2004) and suggest that, whatever the relationship between online networks and social capital, studies of these phenomena are still too much in their infancy to reach any useful conclusions. Less research has been done on economic actors operating outside the aid industry. No work appears to have been published specifically on trust and ICT in developing country enterprises. Some work on the use of mobile phones and social capital in sub-Saharan Africa has been conducted by James Goodman. His most recent work for Vodafone concludes that in South Africa and Tanzania mobile phones are used mostly in strong links (family and friends) but also in weak links with others outside the community, including businessmen (Goodman 2005, 59, 63). Recent much larger multicountry studies (Miller et al. 2005; Souter et al. 2005) also show that the telephone is used extensively to maintain social networks (Molony, forthcoming 2007). Souter et al.’s research suggests that telecommunications can help in enabling producers, intermediaries, and consumers to increase information about the availability and price of goods, thus enhancing market performance. Crucially, the study recognizes

that “the ways in which it does are much more complex than the rather naïve suggestions which are sometimes made that it enables producers to ‘bypass intermediaries’” (Souter et al. 2005, 115). Unfortunately, these studies provide little analysis of the relationships between those entrepreneurs who are using ICT to share this information.

The following discussion takes Tanzania (one of the countries surveyed by Souter et al.) as an example of an African country in which ICT is increasingly being used in business. Using the data from a series of in-depth, semistructured interviews I briefly show how entrepreneurs use mobile phones and the Internet to facilitate their day-to-day business pursuits. In doing so, I shed light on some of the complexities surrounding the sudden interface between established “social integration” and the newer “system integration” (Giddens 1990, 18)—between traditional face-to-face contact and the contact at a distance that ICT now enables. I consider a basic but important question: how important an issue is trust in relation to the new form of communication that ICT enables? I then suggest what implications of this are for future research into ICT and its business and nonbusiness applications in developing countries. I then suggest the implications for future research into ICT.

Methodology

The analysis is based on fieldwork undertaken over a total of fifteen months in 2002 and 2003. I followed entrepreneurs and their contacts, operating in different locations throughout the country, to trace out their business networks. The study covers three subsectors of the Tanzanian economy: domestic perishable foodstuffs marketing; the urban informal construction industry; and the domestic trading and export of African blackwood carvings. A subsector approach was used to ensure that I was exposed to a spread of the enterprises linked to the product and services within these case studies, from supply to production to distribution. The subsector approach is concerned with following networks (Buckley 1998; Kantor 2000) and so offers the opportunity to examine entrepreneurs’ communication channels and their use (or nonuse) of ICT in their business interactions. The decision to use multiple case studies in different geographical areas was taken with a view to further the generalizability of

my findings and so to gain a better representation of the national, macro picture of the use of ICT in MSEs. My sample of entrepreneurs shows MSEs to be a differentiated category by taking into account business that is itinerant and sedentary, urban and rural, niche and market-saturated, and domestic and export, along with differing degrees of business formality.

Entry to the case study was gained through a gatekeeper in each subsector, who then introduced me to other traders who had links to their suppliers throughout the county. I started semistructured interviews with the Dar es Salaam-based traders. A small number of pilot interviews were performed, first with friends and then with key informants. These proved useful in calling to mind new questions and in getting an idea of which questions were unclear and required rewording. Pilot interviews gave a good indication of how long future interviews would take and provided a good setting to work on Chambers' (1998, 202) advice that sitting, asking, and listening are as much an attitude as a method. They also allowed me to try to learn my questions by heart and to practice what Trulsson (1997, 51) has described as a "funnel technique," which begins with wider issues and then homes in on more detail.

After refining this process I then radiated outward along the marketing chain, physically tracing my primary informants' contacts throughout the networks of the subsector. In this respect, my sample was essentially developed through "snowballing" because it relied on some regular contact (through repeat interviews) in informal settings and built up bonds of trust and friendship to make possible access to new contacts. These contacts who were selected by the last informant were not always individuals who use ICT (even where coverage is available), which made contacting them more difficult. Nevertheless, it did ensure that my sample was more representative of those who for whatever reason have not adopted these technologies. I also avoided sticking rigidly to only the contacts I was to meet at a particular location in the supply chain and at times I would diverge from the networks to talk with those I met in various other situations who worked within the subsector. After a while, therefore, the recommended contacts spread beyond the initial networks of my primary informants in Dar es Salaam, thus countering any risk of only meeting

those individuals my primary informants at the point of entry wanted me to meet.

Once I had located the informants to whom I had been recommended by previous contacts along the supply chain, I conducted initial, introductory interviews. For the first few months my knowledge of Swahili—though sufficient to ask the questions—prohibited me from understanding much of the replies, and I employed a research assistant to help me with the discussion. I was later able to conduct interviews without an assistant. I attempted to take an informal stance by chatting with the farmers, carvers, and traders and observing their businesses to get a feel of the environment within which they operated and an overview of what methods of communication were being applied at their end of the marketing process. With this background I could then build on the "obvious questions" and the trust that these sessions created, to then return once I had created a lengthier, more detailed series of questions to form the basis of a more comprehensive interview. This process was aided by creating subsector diagrams to help visualize the networks I was tracing, to which I added communication channels and methods to map the flows of ICT usage. In subsequent interviews entrepreneurs along the supply chains were then asked to draw their own comparisons between the traditional pre-ICT situation (which they tended to report as much traveling to meet business contacts in person) and the improved ICT access of today.

Perishable Foodstuffs

The case study of domestic perishable foodstuffs marketing traces the supply chain of tomatoes and potatoes from the rural farms of Iringa and Mbeya regions in the southern highlands to the wholesale market in Kariakoo, Dar es Salaam, Tanzania's commercial capital. Interviews for the case study mostly took place in March, April, and September 2003. I was able to penetrate the network of a small number of wholesalers (*madalali*; sing., *dalali*, literally "auctioneers") with the help of Eliab Chijoriga, a director and foodstuffs marketing specialist at COSTECH who introduced me to Bartholomeo Sanga, Festo Mkilama, and Kamwene Sanga. Chijoriga urged these *madalali* to give me the contacts of the farmers who supply to them, and they did so once I had gained their friendship and trust

during our preliminary meetings. I then visited these farmers for initial meetings, thereby achieving a complete marketing chain of suppliers and traders whose business dealings I could physically follow in order to track their use of ICT. Much like other studies of traders in Tanzania (e.g., Bryceson 1993, 120), all the farmers and traders covered in this sample turned out to be male. The evidence is based on discussions with fifteen tomato and potato farmers, four intermediary traders, five Dar es Salaam-based *madalali* and various other key informants involved in the trade between the southern highlands and the commercial capital.

The working relationship between farmer and *dalali* reveals how important the *dalali* is to the farmer: not only does the *dalali* buy the farmer's crops but, crucially, he can supply credit to the farmer should he have financial difficulties arising because of poor rains, poor market prices, or the like. From the beginning of their relationship, and while it proceeds, the role that the mobile phone plays is fairly insignificant. When he begins farming and seeks a *dalali* to whom he can supply his crops, the farmer uses local networks to consult other farmers to find out whom they recommend as a *dalali*. This consultation is always face-to-face, as is the first meeting when farmer and *dalali* negotiate terms and agree to do business together. Subsequent meetings occur between the two (usually in Dar es Salaam) to renew ties or share advice on farming and in cases when the farmer wants to approach the *dalali* for credit. All this must be conducted face to face because, as one large tomato farmer explains, irrespective of location, physically meeting businesspeople is still important:

For us Africans often an explanation over the phone is not enough even when you've greeted one another. When you see each other again you start afresh, greeting each other again. Likewise in business even if you've talked on the phone a businessman feels like he's not satisfied so he likes to meet face-to-face so you talk and this satisfies him. That's a way to build faith in business. You know nowadays there's so much competition in this business, so we get customers through information. It's imperative to see each other. (Berod Mhanga, Ilula Mazomba, September 4, 2003)

In using the mobile phone, it is the exchange of supply and demand information that helps the farmer to know whether to divert his produce for

minimum profit more locally or risk maximum loss in Dar es Salaam. Because the *dalali* is a creditor he is already in a position of power over the farmer and can use this information to persuade a farmer to supply only him and trust him regarding the price he says that he sells the crop for. In such a situation the farmer's exposure to prices being offered by other buyers can effectively be blinkered, which is the kind of sticky aspect of a real-world business relationship that those promoting ICT to link the farmer and market buyer directly (e.g., England 2004) would do well to observe. Even when ICT is employed to relay information, and especially information on prices, the reliability of that information relies on trust. Trust usually requires a face-to-face relationship to develop, as can be seen with the experience of retailers in the next case study.

African Blackwood Carvings

The domestic trading and export of African blackwood carvings case study follows the entire market chain of Makonde carvings (*vinyago*; sing., *kinyago*) from the source of the African blackwood tree (*Dalbergia melanoxylon*) in the rural southeast Mtwara region, to Dar es Salaam, to buyers worldwide. Interviews mostly took place during the months of January–February and July–August 2003 and were conducted with eleven different carvers or carving groups, nine collectors (who supply retailers), and seventeen Tanzania-based retailers.

The idea of studying *vinyago* trade emerged during the first phase of the research after a particularly helpful interview with Hamisi Geddy and Dickson Wiva at the urban retail and export end of the *vinyago* trade, who later introduced me to Mary Shirima in Mwenge crafts village. It was Mary's suppliers in the township and villages surrounding Dar es Salaam and Mtwara to whom I then traveled, and it was Mtwara where I met Philipo Luvale, a former carver who directed me to some of his carving contacts I traced throughout the region. Together these individuals and groups constitute a spread of points along the marketing chain of producers, suppliers, and retailers of African blackwood carvings whom I could then physically follow in order to investigate their use of ICT.

Many of the rural villages where the carving takes place do not receive mobile phone coverage. The collectors insist that, even where coverage does

exist (and if the carvers were inclined to use mobile phones or could afford to), dealing with the carvers cannot be done over the telephone. The collectors say that they must visit the carvers personally and spend time with them to ensure that their work is ready at the agreed time and to the exact specifications of the retailers whom they supply. As one collector put it, "You must see the *kinyago*—you can't hear it over the telephone" (Alex Milanzi, Mbawala Juu, July 18, 2003). Retailers further down the supply chain also place much value on face-to-face communication with customers in their shops. As well as helping to sell items, face-to-face interaction provides them with a chance to learn about demand. Retailers I interviewed believe that in Tanzania this cannot be done effectively by means other than personal interaction.

Where ICT does appear to facilitate relationships in the *vinyago* case study is with foreign buyers via a combination of e-mail and SMS (short message service; text). The case study concentrates on three female retailers who export *vinyago* and explores how they have used their local networks to gain exposure to international *vinyago* buyers, apparently without the use of ICT because neither technology was easily available in Dar es Salaam when they were developing these links. These women's networks linked them to a friend working at Tanzania's Board of External Trade, who put them in touch with donors, who then sponsored them to travel to expositions abroad where they then accessed buyers in the international market. The women regard as their best customers these repeat bulk buyers whom they meet at expositions or who visit their craft village on a number of occasions. It is in communication with these customers that ICT proves to be most useful, not in *finding* customers (because this is done face-to-face in Mwenge crafts village or at expositions), but in *keeping* customers. For example, Mary Shirima, a retailer who exports, sees e-mail and SMS as,

like being face-to-face with an *mzungu* [European] in their country, but I am here in Tanzania, ready to find any *vinyago* the customer needs because e-mail or text is fast. And so [the customers] come to me every time, I am their person in Tanzania and because I have e-mail and it is fast, the customer always uses me and so I can keep

my customers. (Mary Shirima, Mwenge, January 13, 2003).

ICT helps to keep international customers because e-mail and SMS technology help users receive messages (about obtaining the *vinyago* for an order, for example) and react swiftly using the same medium. In this respect the ICT is a technology that both customer and retailer employ to ensure that a message is communicated in the most efficient way possible so that both parties can make a profit. It is a cheaper, and usually a more reliable method, of conducting business that was first established when both parties met face-to-face.

Nothing here is particularly novel about the way that these technologies are applied in business dealings throughout Tanzania, between Tanzania and other countries, or between businesses in developed countries. What *is* new to the use of the ICT by these retailers when compared with their other means of communication is that e-mail and SMS are being used to convey the typically Tanzanian gesture of frequent greetings, enabling them to strengthen their relationship with their customers. Because a text or e-mail is comparatively cheaper, more reliable, and far less hassle than direct calls, fax, or the postal service, retailers can send brief greetings to their customers in the same way that they visit a colleague or customer in Dar es Salaam. As one male retailer explains,

I use text or e-mail to greet my customers, maybe every few months, to say "How are you? How is your family? How is business? I hope that you and your family are well," these greetings that we have here in Tanzania. And customers like this, I think it makes them remember . . . how we are friendly and [that Tanzanians] will ask these greetings . . . and the customers will reply and sometimes they make an order. It reminds them of our friendship. (Frank Morenje, Mwenge, August 1, 2003)

Justina Matondane, another retailer who exports, also uses the term "friend" when referring to business customers to whom she sends Easter and Christmas greetings by e-mail or text. She refers to these recipients abroad as her "customer-friends," contacts who appear to be international customers that she is friendly with, but whom she first met through business; however, she appears to have lit-

tle social contact with these “friends” other than as buyers that she sends goods to and, occasionally, whom she will sometimes meet again at expositions. Justina’s motivation for these greetings is so that the customers will remember her name. In couching the communication in social terms by referring to “friendship” in greeting business customers, it is clear that ICT is being used as a tool for maintaining contact when frequent face-to-face interaction of either a business or social nature is not possible because of the large distances between those using the technologies. The use of ICT among individuals who are in closer proximity and who have more opportunity for interpersonal communication is now considered in this final case study.

Informal Construction Sector

The construction sector case study analyzes the everyday business communication of informal construction workers as they find, secure, and complete their work. The analysis is based on semistructured interviews conducted mostly from late June to mid-August 2003 with nineteen leaders of groups of workers (and one laborer) who comprise groups operating in the informal construction sector of Dar es Salaam, one of Africa’s fastest growing cities (UN-Habitat 2004). The informants are broadly representative of informal construction workers in the region, their names having been obtained from a sample population of 26,323 workers identified by the Support for Informal Construction Workers in Dar es Salaam (STICW-Dar) project with the United Nations Development Programme, the International Labour Organisation, and the University of Dar es Salaam.

The twenty informal sector construction workers who were interviewed were chosen from the STICW-Dar project’s sample of “leading beneficiaries.” The contacts list gave the group name and in most cases a contact mobile phone number, but no further details. Phone numbers were not provided for eleven (although one was obtained later), two did not answer the phone after repeated attempts, for nine groups the number was not in operation (possibly because it had expired). One ICW was not interested in being interviewed, citing dissatisfaction with the STICW-Dar project. The leaders described their own primary skill as carpenter (3); concreter;

electrician; engineer; general builder (6); glazier; laborer; materials supplier (2); painter; plumber; and welder. During the semistructured interview, group leaders were asked to draw their own comparisons between the traditional pre-ICT situation and the improved ICT access of today. These replies, and observation through physically tracing the marketing of construction services, were then used as empirical evidence with which to assess how work-group leaders communicate with each other in business, and the role that new ICT plays in these interactions.

Within the groups it is often only the leader who possesses a mobile phone that is used for work. This serves as a significant cost-saving device in day-to-day business communication. Of the nineteen gang-leaders, fourteen pointed out that a significant advantage of mobile phones is that they help cut traveling costs. This was expressed by Imani Sunga, a general builder:

If I travel to the guy who is selling pallets and he’s not got any I can waste money and not make a profit. But if I text him and he doesn’t have any pallets I don’t lose much money, only a few shillings. It’s cheap to text on the phone; it’s cheaper than using a commuter bus. (Imani Sunga, “Veterinary” [sic] area, August 6, 2003)

Nevertheless, although it is usually the leader who seeks new contracts for the group, and his mobile phone helps in cutting travel costs, interpersonal communication is crucial. As Strøm (2002, 280) suggests in the Philippine context, one reason for this is a matter of supply and demand: there is little incentive for employers to handle requests by phone when there is a surplus of qualified persons willing to physically turn up and offer their services. Another reason (which holds across various sectors in the economy) is that people tend to go to offices in person rather than call them. Many offices are often paper- and not computer-based, and even if assistance is given immediately it can still require having to wait for relevant paperwork to be found, or for a missing staff member to be located when they have failed to answer their phone.

Although not enough is known about on-site networks, this research (and the work of Mitullah and Wachira [2003]) shows that, *off-site*, the gang-leader spends time in his informal networks of

knowledge. These are similar to the attributes that Granovetter (1973, 1974) identifies in successful job seekers who have widespread but weak relationships, and are associated with his notion of "weak ties" and thin impersonal trust with strangers. These "bridging" forms of social capital (Putnam 2000) link people to distant acquaintances who move in different circles from their own and fill "structural holes" (Burt 2001) between discrete groups of people operating in separate social worlds. Leaders' networks are composed of friends and relatives (not exclusively those in the construction industry) who may have some ideas on where their gangs' services are needed. The networks are open, with the gang leader constantly relying on his "eyes and ears" as he listens to conversations in social settings (particularly bars) in order to follow up on opportunities should they arise and through much physical searching for emerging work sites. The process of actually winning the contract involves negotiation, during which time the gang leader's mobile phone takes a minor role to face-to-face contact. And when a contract is won and the leader needs to discuss pay with his fellow group members, this must be conducted personally. As one group leader clearly puts it,

[The other group members] don't have phones, and if they did it would be bad to talk money over phone with people I work with.

Why is that?

It's bad manners. (Peter Makoye, Mjimwema, July 8, 2003)

Overlap Between Social Interaction and Business: The Importance of Face-to-Face Communication

This brief analysis of the three case studies reveals the overlap between social interaction and business, otherwise known as social capital—the social aspects of economic activities (Fine 2001, 198). The two are sometimes held distinct in the literature, but this runs the risk of ignoring much business communication that is occurring between "friends." I have shown with Justina, for example, that although she is clearly in a business relationship with her *vinyago* buyers abroad, she refers to them as "friends." Friendships, whether social or business, are made by face-to-face contact, but are vulnerable to changes

in the life-course and strategies of the participants and so require continual reworking (Seierup 1994, 12; Rose 1998).

We have seen the importance of renewing ties in the relationship between farmer and *dalali*, but even in this relationship ICT is not crucial. The case of Kamwene Sanga, a Kariakoo-based *dalali* who trades potatoes, shows that it is still possible to operate successfully without using any ICT at all and to rely exclusively on personal interaction. By adopting the "outwardly-directed social lifestyle" (Bryceson 1993, 141) of the mobile intermediary trader, Kamwene has managed to build relationships with farmers and buyers so that they only consider supplying to and buying from him. His success, he believes, is not because farmers are heavily indebted to him or they know of no alternative buyer or seller. Rather, it is because he takes the time to do business with them face-to-face, even when they are unable to come to him. He will not use a telephone because, as he puts it,

I don't trust the telephone; it always lies. I can tell a farmer to bring potatoes because the price is high, but then when the potatoes are delivered to me [the farmer] complains that the price has dropped. I receive calls at my office but I never call the farmers back. . . . They ask if they should pack, but when I answer and say 'Yes, send me potatoes', then many of farmers send me them, which lowers the price and the farmers then complain to me. (Kamwene Sanga, April 17, 2003)

Kamwene's complete rejection of the technology is quite unusual for Tanzanian entrepreneurs of his means in areas where mobile phone coverage exists, and his comment does reflect an issue more with the time delay between communication and delivery of his suppliers' goods than with the use of the telephone itself. Nevertheless, his overall preference for personal communication does seem to be closer to the way much business is conducted by the majority of ICT-using (largely mobile phone using) entrepreneurs across the three case studies. These case studies suggest that mobile phones are fast becoming a *new* form of network in twenty-first-century Africa, but they are still far from being the continent's *dominant* form of network as Støvring (2004, 22) contends. This runs counter to evidence that in a variety of developed nations users are shifting their com-

municative habits to accommodate mobile phones, and in the process undermining long-standing routines and rituals in communication (Katz & Aakhus, 2002, 308). In each case study we see evidence that during the course of a business relationship interpersonal communication is often favored over using ICT, especially where building on the business relationship and where making a deal are involved. (The two main exceptions where ICT is used extensively relative to cost and time saving: either where the information that is being communicated does not warrant being physically present and can save on a local bus fare and time away from the business; or where travel involves prohibitively expensive trips over a very long distance.) The Internet, access to which is growing in Tanzania, but at a far slower rate than mobile phones, is even further from this position of dominance over more traditional forms of communication. This may explain why Mercer (2004, 9) has found that the idea of meeting strangers in cyberspace (a popular motif in much of the literature on cyberspace in developed countries) holds little appeal in Tanzania.

What appears to make informal networks personal is direct, face-to-face contact. Face-to-face communication engages all the senses and for this reason has been described as “the richest multi-channel medium” (Urry 2004, 120) helping to establish and reproduce trust (Urry 2002, 259; Slater & Kwami 2005, 3). Its importance in enterprise has been observed elsewhere on the continent and further afield, from ad hoc discussions between white Zimbabweans at sports events and business conferences (Fafchamps 2001, 208) and Kenyan Asians having a casual conversation at the club, mosque, or family gathering (McCormick 1997, 122), to workers in Singapore’s financial sector who make “sites of pleasure in the city come alive as business institutions” (Amin & Thrift 2002, 75). Face-to-face communication is a particularly pervasive feature of African MSE economies (Trulsson 1997, 132–133; McCormick 1999a, 1532; Mungunasi 2000, 4.1; Dahms 2001b, 9–10; Egbert 2004). Indeed, it is suggested that personal interaction cultivated through extensive face-to-face interaction is so highly valued as the most effective method of business communication in Africa (McCormick 1998; Pigato 2001) that poor enterprise owners will only act upon, and trust, information delivered on a personal level (Duncombe & Heeks 2001, 4).

ICT and Trust: A Changing Business Culture?

A persistent issue throughout the case studies concerns the trade-off between these new technologies and the challenge of trust. In the entrepreneurs’ eyes, this dilemma might seem to involve a constant decision between the advantage of being mobile with a cellular phone (or with access to e-mail through Internet cafés), and so away from aspects of business, and having to trust and rely upon the integrity of others in an environment where being wary of transaction failure is often the most sensible approach. On prices in particular, reliable information relies on trust and this usually requires a face-to-face relationship, even when ICT is employed to relay the information. I have suggested that mobile phones can help farmers with supply and demand information, but noted that this is only so long as there is trust between the two—trust that the *dalali* is truthful in the price he tells the farmer that he has sold his crops for.

In this respect, mobile phones can be seen as a facilitating technology for existing, trust-based relationships. A possible reason for this is that it may be easier for new telephone users to infer the physical nuances of face-to-face communication from voice communication within more familiar and more trusted relationships (Souter et al. 2005, 114). Yet, for many farmers dealing with Kariakoo the reality is that the mobile phone does not alter this trust. There is nothing conclusive from the perishable foodstuffs case study to suggest that the mobile phone itself can actually facilitate the trust relationship between a farmer and his *dalali*. In the absence of large corporate and governmental institutions capable of dealing fairly with contract enforcement, ICT can count for little minimal trust, let alone extended trust.

Personal exchange based on long-term relationships can help entrepreneurs to use local social networks to enter foreign markets where they have gained the trust of buyers by supplying them reliably over time. I have shown in the case of Justina and Mary. These women now use ICT as a tool to preserve that trust by staying in touch by maintaining contact at a friendly, social level—albeit it at a distance. With the help of ICT, these women are managing to do what Fafchamps (2004, 483) argues institutions have failed to do: move from the per-

sonal to the impersonal exchange. This transition remains to be made by formal and informal institutions such as those that ensure credit contract enforcement. In the face of competition from non-African, foreign-based *vinoyo* retailers, these women now have the challenge of dealing with a new wave of foreign customers online whom they cannot easily meet personally. This is the challenge many other African businesses will also have to come to terms with as the Internet becomes an ever more important global trading tool.

Conclusion

I have attempted to tackle the question of "how important is trust in relation to the new form of communication that ICT enables?" The analysis highlights at least three properties of social relationships that affect trust, possibly in cumulative or complementary ways: face-to-face, context-rich interactions; multiplex, multicontent, dyadic relationships, which mix business and friendship/kinship functions; and "embedded" or "strong" relationships, where the interaction between the two potential business partners is interwoven into a set of other relationships among third-party friends and kinship members. The evidence suggests that trust, a variable associated with social capital, is a hugely important issue in the use of ICT among African micro- and small enterprises. At this stage, however, I am wary of adding to the confusion of the "sack of analytical potatoes" that combine to form social capital. It is for this reason, and also because the empirical analysis of some of the much-quoted studies of social capital have been called into question (e.g., Narayan & Pritchett 1997; Durlauf 2002) that, as a concept of analysis, I would argue that at times it is useful to completely disassociate trust from the murky waters of social capital. This approach is supported by Lyon's Ghanaian study (2000, 677), which found that while there are difficulties in trying to examine or measure the stock of social capital, much can still be gained from trying to understand how trust is produced. Even if it can be extracted from its relationship with other factors, trust can be regarded as a product of social capital and not as a constituent of it (Field 2003, 137). As with reciprocity, trust does not exist independently of social relationships (Woolcock 1998, 185). There is no harm, empirically, in dealing with trust as an independent

factor and leaving out questions of the cause and effect relationship with social capital.

Research Implications and Implications for Practice

What are the implications of this for future research into ICT and its business and nonbusiness applications in developing countries? In answering this it is worth noting that there *are* still aspects of the social capital literature, such as "bridging," "bonding," and "linking" social capital, which may be helpful for future research into the influence of ICT in business interactions, or what has been termed "socio-technical capital": productive resources which inhere in patterns of social relations *that are maintained with the support of information and communication technologies* (Resnick 2004, 401). As yet social capital—let alone trust—is largely missing from the ICT for development scholarship, so it sometimes seems as though, for all the interest in social *capital* and the potential for developmental impact of ICT, mobile phones seem to be more often put to *social* use than they are explicitly used for the generation of *capital*. In particular, there is a need to better know whether mobile phones play a role in creating and maintaining trust in business outside the family where "networks of working relationships" (Lyon 2000, 671) do not already exist, and where face-to-face relationships are not possible.

Methodologically, a more accurate means of assessing the reported subject matter of communication between individuals could also help in this respect. Although some quantitative surveys do give the chance for interviewees to disclose their various information needs and sources of information, these should be complemented by a series of in-depth interviews in which researchers are at liberty to ask more detailed questions. Such qualitative methods allow a smaller sample of interviewees to be probed but can better capture, as this study has attempted to show, some of the reasons why certain sources of information are favored over others. Only with multiple, in-depth, and semistructured interviews, for example, did it become clear that some Tanzanian farmers are in a relationship with a *dalali* who is also their creditor, and, as such, the *dalali* should not be constantly burdened by the farmer with questions about how much his crops are being sold for; the farmer should just trust his *dalali's* word. In another

situation, only because the interviewer had the flexibility to move away from a preset line of inquiry, did it emerge that in certain business dealings it is bad manners to discuss the payment of money over the phone. This, in effect, makes face-to-face communication essential.

A long-term study would be essential here to capture both the continuity of information and communication flows and the changes of entrepreneurs' networks over an extended period. Call log analysis (as used by Donner [2005]) may be useful in further revealing networks, though future study would also benefit from survey work in communities that do not yet have mobile coverage to see how networks change when mobile phones are adopted for the first time in business. This would help give some pointers as to how the Internet could be promoted more widely as a trading tool. Together, such moves would help answer the call (Souter et al. 2005, 27) for a strong evidence base to inform policy development if infrastructure and ICT for development applications are to be effective in achieving Millennium Development Goals (MDGs) and other goals. In particular, it would further strengthen our knowledge of the preferred, trusted methods of information and communication flows within communities, and aid dissemination in areas such as agricultural extension and health promotion. ■

References

- Adeya, C. N. (2005). Wireless technologies and development in Africa. Unpublished report.
- Amin, A., & Thrift, N. (2002). *Cities: Reimagining the urban*. Cambridge: Polity.
- Barr, A. (1998). Enterprise performance and the functional diversity of social capital. Report of the Centre for the Study of African Economies, University of Oxford, Oxford.
- Barr, A. (1999). Do SMEs network for growth? In K. King & S. McGrath (Eds.). *Enterprise in Africa: Between poverty and growth* (pp. 121–131). London: Intermediate Technology.
- Barr, A. (2000). Social capital and technical information flows in the Ghanaian manufacturing sector. Report no. 52, Centre for the Study of African Economies, University of Oxford, Oxford.
- Biggs, T., & Srivastava, P. (1996). Structural aspects of manufacturing in sub-Saharan Africa. Report no. 346, Washington, D.C.: World Bank.
- Bourdieu, P. (1993). *Sociology in question*. London: Sage.
- Bryceson, D. F. (1993). *Liberalizing Tanzania's food trade*. Oxford: James Currey.
- Buckley, G. (1998). The application of sub-sector analysis: The case of informal sector tailors in Kenya. *Small Enterprise Development*, 9(2), 50–56.
- Burt, R. (2001). Structural holes versus network closure as social capital. In N. Lin, K. Cook, & R. Burt (Eds.). *Social capital: Theory and research* (pp. 31–56). New York: Aldine De Gruyter.
- Castells, M. (1998). *End of millennium*. Oxford: Blackwell.
- Chambers, R. (1998). *Rural development: Putting the last first*. Harlow, U.K.: Longman.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology* 94, 95–120.
- Commission for Africa. (2005). *Our common interest: Report of the Commission for Africa*. London: Commission for Africa Secretariat.
- Dahms, M. (2001a). No cause for Afro-pessimism: A study of information, communication and technological innovation in Sengerema District, Tanzania: International workshop on African innovation systems and competence-building in the era of globalisation (pp. 29–31). Aalborg University. March.
- Dahms, M. (2001b). Telecentres: Connecting Africa? *ITU Telecom Africa 2001, Infrastructure and Applications Summit, Session 13: Telecentres for Connecting Africa*. Unpublished conference paper.
- Dasgupta, P. (1988). Trust as a commodity. In D. Gambetta (Ed.). *Trust: Making and breaking cooperative relations* (pp. 49–72). Oxford: Blackwell.
- De Haan, L. J., & Quarles van Ufford, P. (2002). About trade and trust: The question of livelihood and social capital in rural-urban interactions. In I. S. A. Baud & J. Post (Eds.), *Re-aligning actors in*

- an urbanizing world* (pp. 243–264). London: Ashgate.
- DOI. (2001). Creating a development dynamic: Final report of the digital opportunity initiative. *Report*. New York: UNDP.
- Donner, J. (2004). Microentrepreneurs and mobiles: An exploration of the uses of mobile phones by small business owners in Rwanda. *Information Technologies and International Development* 2(1), 1–22.
- Donner, J. (2005). The use of mobile phones by microentrepreneurs in Kigali, Rwanda: Changes to social and business networks. Conference on *Wireless Communication and Development: A Global Perspective*. Annenberg Research Network, October 7–8, 2005.
- Duncombe, R., & Heeks, R. (2001). *ICTs and small enterprises in Africa: Lessons from Botswana*. Manchester, U.K.: IDPM University of Manchester.
- Durlauf, S. N. (2002). On the empirics of social capital. *Economic Journal* 112(483), 459–479.
- Egbert, H. (2004). Networking and entrepreneurial success: A case study from Tanga, Tanzania. In K. Wohlmuth, M. Meyn, A. Gutowski, T. Knedlik, & S. Pitamber (Eds.), *African entrepreneurship and private sector development* (pp. 291–309). Münster, Germany: Lit.
- England, A. (2004). *African farmers discover technology's benefits*. Retrieved November 24, 2004 from <http://topics.developmentgateway.org/ict/rc/ItemDetail.do?1025336>
- Fafchamps, M. (1999). Networks, communities and markets in sub-Saharan Africa: Implications for firm growth and investment. Report No. 99-24, Centre for the Study of African Economies, University of Oxford, Oxford.
- Fafchamps, M. (2001). The role of business networks in market development in sub-Saharan Africa. In M. Aoki & Y. Hayami (Eds.), *Community and market development in sub-Saharan Africa* (pp. 206–210). Oxford: Oxford University Press.
- Fafchamps, M. (2004). *Market institutions in sub-Saharan Africa: Theory and evidence*. Cambridge, Mass.: MIT Press.
- Fafchamps, M., & Minten, B. (1999). Property rights in a flea market economy. Report No. 99-25, Centre for the Study of African Economies, University of Oxford, Oxford.
- Field, J. (2003). *Social capital: Key ideas*. London: Routledge.
- Fine, B. (2001). *Social capital versus social theory: Political economy and social science at the turn of the millennium*. London: Routledge.
- Giddens, A. (1990). *The consequences of modernity*. Stanford, Calif.: Stanford University Press.
- Goodman, J. (2005). Linking mobile phone ownership and use to social capital in rural South Africa and Tanzania. In D. Coyle (Ed.), *Africa: The impact of mobile phones* (pp. 53–65). Newbury, U.K.: Vodafone.
- Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology* 78(6), 1360–1380.
- Granovetter, M. (1974). *Getting a job: A study of contacts and careers*. Chicago: University of Chicago Press.
- Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology* 91 (November), 481–510.
- Humphrey, J., & Schmitz, H. (1998). Trust and inter-firm relationships in developing and transition economies. *Journal of Development Studies* 4(34), 32–61.
- Ishihara, S. (2003). The political economy of culture: The informal economy of Kibera Slums, Nairobi, Kenya. Ph.D. dissertation, SOAS, University of London.
- ITU. (2005). International Telecommunications Union, Africa regional ICT profile 2004. Retrieved February 10, 2004 from www.itu.int/ITU-D/ict/statistics/ict/index.html
- Jagun, A., Whalley, J., & Ackermann, F. (2005a). "GSM gives me peace of mind": The impact of telephony on intermediation in a Nigerian fabric weaving micro-industry. Connecting people and places: challenges and opportunities for develop-

- ment. Open University, Milton Keynes, U.K.: September 8, 2005
- Jagun, A., Whalley, J., & Ackermann, F. (2005b). The impact of unequal access to telephones: Case study of a Nigerian fabric weaving micro-enterprise. Report No. 2005/21, Strathclyde Business School, Glasgow.
- James, J. (2005). Technological blending in the age of the Internet: A developing country perspective. *Telecommunications Policy* 29, 285–296.
- Kantor, P. (2000). Promoting women's entrepreneurship development based on good practice programmes: Some experiences from the north to the south. Report No. 9. Geneva: ILO.
- Karlsson, C., & Westin, L. (1994). Patterns of a network economy: An introduction. In B. Johansson, C. Karlsson, & L. Westin (Eds.), *Patterns of a network economy* (pp. 1–12). Berlin: Springer-Verlag.
- Katz, J. E., & Aakhus, M. (2002). Conclusion: making meaning of mobiles: A theory of *Apparatgeist*. In J. E. Katz & M. Aakhus (Eds.), *Perpetual contact: Mobile communication, private talk, public performance* (pp. 301–318). Cambridge: Cambridge University Press.
- King, K. (1996). *Jua Kali Kenya: Change and development in an informal economy, 1970–95*. London: James Currey.
- King, K., & McGrath, S. (2002). *Globalisation, enterprise and knowledge: Education, training and development in Africa*. Oxford: Symposium.
- Liedholm, C., & Mead, D. C. (1999). *Small enterprises and economic development: The dynamics of micro and small enterprises*. London: Routledge.
- Lloyd-Evans, S., & Potter, R. B. (2002). *Gender, ethnicity and the informal sector in Trinidad*. Aldershot, U.K.: Ashgate.
- Lyon, F. 2000. Trust, networks and norms: The creation of social capital in agricultural economies in Ghana. *World Development* 28(4), 663–681.
- Lyons, M., & Snoxell, S. (2005). Creating urban social capital: Some evidence from informal traders in Nairobi. *Urban Studies* 42(7), 1077–1097.
- Malecki, E. J. (1991). *Technology and economic development: Local, regional and national competitiveness*. Harlow, U.K.: Longman.
- McCormick, D. (1996). Small enterprise development: A network approach. In D. McCormick & P. O. Petersen (Eds.), *Small enterprises: Flexibility and networking in an African context* (pp. 310–314). Nairobi: Longhorn.
- McCormick, D. (1997). Industrial district or garment ghetto? Nairobi's mini-manufacturers. In M. P. Van Dijk, & R. Rabellotti (Eds.), *Enterprise clusters and networks in developing countries*, (pp. 109–130). London: Frank Cass.
- McCormick, D. (1998). Enterprise clusters in Africa: On the way to industrialisation? Report No. 366. Nairobi: IDS.
- McCormick, D. (1999a). African enterprise clusters and industrialization: Theory and reality. *World Development* 27(9), 1531–1551.
- McCormick, D. (1999b). Enterprise clusters in Africa: Linkages for growth and development. In K. King & S. McGrath (Eds.), *Enterprise in Africa: Between poverty and growth* (pp. 132–143). London: Intermediate Technology.
- Meagher, K. (2005). Social capital or analytical liability? Social networks and African informal economies. *Global Networks* 5(3), 217–238.
- Meagher, K. (2006). Social capital, social liabilities, and political capital: Social networks and informal manufacturing in Nigeria. *African Affairs* 105(421), 553–582.
- Mercer, C. (2004). Building an information society in Tanzania: Modernization through the Internet. African Studies Association 47th Annual Meeting. New Orleans, La. Nov. 11–14, 2004.
- Mercer, C. (2006). Telecentres and transformations: Modernizing Tanzania through the Internet. *African Affairs* 105(419), 243–264.
- Miller, D., Skuse, A., Slater, D., Tacchi, J., Chandola, T., et al. (2005). Information society: Emergent technologies and development communities in the South. Report, Information Society Research Group, London.
- Mitullah, W. V., & Wachira, I. N. (2003). Informal la-

- bour in the construction industry in Kenya: A case study of Nairobi. Report No. 204, Geneva: ILO.
- Mohan, G., & Mohan, J. (2002). Placing social capital. *Progress in human geography* 26(2), 191–210.
- Molony, T. S. J. (2005). Food, carvings and shelter: the adoption and appropriation of information and communication technologies in Tanzanian micro and small enterprises. Ph.D. dissertation, University of Edinburgh.
- Molony, T. S. J. (2006). ICT in developing countries. Report No. 261, Parliamentary Office of Science and Technology, Westminster, London.
- Molony, T. S. J. (forthcoming, 2007). Non-developmental uses of mobile communication in Tanzania. In J. E. Katz (Ed.), *The handbook of mobile communication studies*. Cambridge, Mass.: MIT Press.
- Molony, T. S. J., & Hammett, D. P. (forthcoming, 2007). The friendly financier: Talking money with the silenced assistant. *Human Organization*.
- Mungunasi, E. (2000). Survey of information and communication technologies within small, micro and medium enterprises in Tanzania. Report, World Bank, Washington, D.C.
- Murphy, J. T. (2002). Networks, trust, and innovation in Tanzania's manufacturing sector. *World Development* 30(4), 591–619.
- Mwesige, P. G. (2004). Cyber elites: A survey of Internet cafe users in Uganda. *Telematics and Informatics* 21(1), 83–101.
- Nadvi, K. (1999). Shifting ties: Social networks in the surgical instruments cluster in Sialkot, Pakistan. *Development and Change* 30(1), 141–175.
- Narayan, D., & Pritchett, L. 1997. Cents and sociability: Household income and social capital in rural Tanzania. World Bank Policy Research Working Paper, number 1796. Washington, D.C.: World Bank.
- Nielinger, O. (2004). Assessing a decade of liberal sector reforms in African telecommunications. Report, Institute of African Affairs, Hamburg.
- Norris, P. (2003). Social capital and ICTs: Widening or reinforcing social networks? International Forum on Social Capital for Economic Revival, Tokyo, March 24–25, 2003.
- Parker, J. C. (1994). Patterns of business growth: Micro and small enterprises in Kenya. Ph.D. dissertation, Michigan State University.
- Pedersen, P. O. (1996). Flexibility and networking: European and African context. In D. McCormick & P. O. Pedersen (Eds.), *Small enterprises: Flexibility and networking in an African context* (pp. 3–17). Nairobi: Longhorn.
- Pedersen, P. O. (1999). Trading agents and other producer services in African industrialization and globalization. In K. King & S. McGrath (Eds.), *Enterprise in Africa: Between poverty and growth* (pp. 144–155). London: Intermediate Technology.
- Pigato, M. A. (2001). Information and communication technology, poverty, and development in sub-Saharan Africa and South Asia. Report No. 20, World Bank, Washington, D.C.
- Pigg, K. E., & Crank, L. D. (2004). Building community social capital: The potential and promise of information and communication technologies. *Journal of Community Informatics* 1(1), 58–73.
- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology* 24, 1–24.
- Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy* 6(1), 65–78.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.
- Reich, R. B. (1991). *The work of nations: A blueprint for the future*. London: Simon & Schuster.
- Resnick, P. (2004). Impersonal sociotechnical capital, ICTs, and collective action among strangers. In W. H. Dutton, B. Kahin, R. O'Callaghan, & A. Wyckoff (Eds.), *Transforming enterprise* (pp. 399–412). Cambridge, Mass.: MIT Press.
- Rogerson, C. M. (2001). In search of the African miracle: Debates on successful small enterprise development in Africa. *Habitat International* 25, 115–142.

- Rohde, M. (2004). Find what binds: Building social capital in an Iranian NGO community system. In M. Huysman & V. Wulf (Eds.), *Social capital and information technology* (pp. 75–112). Cambridge, Mass.: MIT Press.
- Rose, R. (1998). Getting things done in an anti-modern society: Social capital networks in Russia. Report No. 6, World Bank, Washington, D.C.
- Seierup, S. (1994). Small town entrepreneurs and their networks in Kenya. Report No. 94.1, Centre for Development Research, Copenhagen.
- Slater, D., & Kwami, J. (2005). Embeddedness and escape: Internet and mobile use as poverty reduction strategies in Ghana. Report No. 4, Information Society Research Group, London.
- Souter, D., Scott, N., Garforth, C., Jain, R., Mascarenhas, O., & McKemey, K. (2005). The economic impact of telecommunications on rural livelihoods and poverty reduction: A study of rural communities in India (Gujarat), Mozambique and Tanzania. Report, Commonwealth Telecommunications Organisation report for U.K. Department for International Development.
- Stiglitz, J. (1999). Scan globally, Reinvent locally. Keynote Address to the Global Development Network Conference, Bonn, November 5–8, 1999. Retrieved November 14, 2003 from www.gdnet.org/pdf/226_GDNfinal.pdf
- Stiglitz, J. (2000). Formal and informal institutions. In P. Dasgupta & I. Serageldin (Eds.), *Social capital: A multifaceted perspective* (pp. 59–68). Washington, D.C.: World Bank.
- Støvring, J. (2004). "The Washington consensus" in relation to the telecommunication sector in African developing countries. *Telematics and Informatics* 21(1), 11–24.
- Strøm, G. (2002). The telephone comes to a Filipino village. In J. E. Katz & M. Aakhus (Eds.), *Perpetual contact: Mobile communication, private talk, public performance* (pp. 274–283). Cambridge: Cambridge University Press.
- Szreter, S. (1999). A new political economy for new labour: The importance of social capital. *Renewal* 7(1), 30–44.
- Tripp, A. M. (1997). *Changing the rules: The politics of liberalization and the urban informal economy in Tanzania*. Berkeley: University of California Press.
- Trulsson, P. (1997). *Strategies of entrepreneurship: Understanding industrial entrepreneurship and structural change in northwest Tanzania*. Linköping, Sweden: Department of Technology and Social Change, University of Linköping.
- UN-Habitat. (2004). Human settlements statistical database, version 4. Dar es Salaam. Retrieved April 16, 2004 from www.unhabitat.org/programmes/guo/data_hdsdb4.asp
- UNDP. (2001). *Human development report: Making new technologies work for human development*. New York: Oxford University Press.
- Urry, J. (2002). Mobility and proximity. *Sociology* 36(2), 255–274.
- Urry, J. (2004). Small worlds and the new "social physics." *Global Networks* 4(2), 109–130.
- Warde, A., & Tambubolon, G. (2002). Social capital, networks and leisure consumption. *Sociological Review* 50(2), 155–180.
- Woolcock, M. (1998). Social capital and economic development: Toward a theoretical synthesis and policy framework. *Theory and Society* 27(2), 151–208.
- World Bank. (1998). *World development report: Knowledge for development*. Washington, D.C.: World Bank.
- World Bank. (2000). Can Africa claim the 21st century? Report, World Bank, African Development Bank, United Nations Economic Commission for Africa, Washington, D.C.
- World Bank. (2004). *Skills development in sub-Saharan Africa*. Washington, D.C.: World Bank Group.