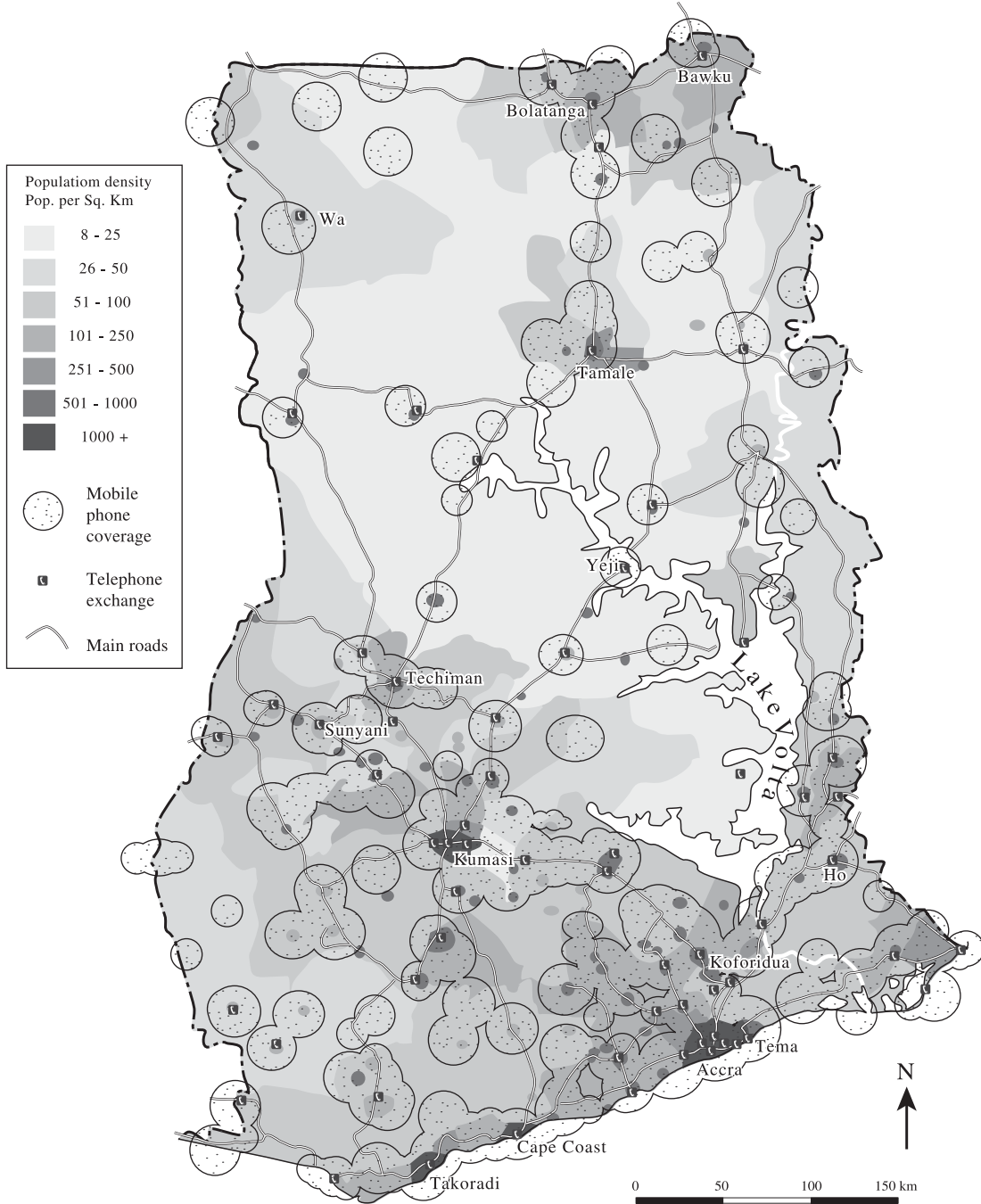


4 | Mobile Traders and Mobile Phones in Ghana

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When Ghana deregulated its telecommunications sector in 1994, there were 0.3 landlines per 100 inhabitants—the same teledensity as in 1950 (Michelsen 2003). Ten years later, there were nearly 1.5 landlines, 8 mobile phone subscribers, and 1.8 Internet users per 100 inhabitants (ITU 2004). In 1997, there were only twenty-five pay phones nationwide but within two years they numbered five thousand (Segbefia 2000). Telecommunication technology's beneficial effects are particularly pronounced in developing countries where it has been estimated that the positive impact of mobile telephony on economic growth may be twice as large compared to developed countries (Waverman, Meschi, and Fuss 2005). Studies have shown that adoption of mobile phones reduces transportation and transaction costs, and enhances trust among members of trade networks (Overå 2006). Emily Chamlee-Wright (2005) argues that telecommunications are a crucial factor enhancing microenterprise. Village phone schemes seem to have a broad transformative potential beyond the emergence of "pockets of modernization" (Aminuzzaman, Baldersheim, and Jamil 2003). Yet the extreme urban bias in the geographical distribution of telecom services and their high costs, especially of mobile phones, limit many people's possibility of using new telecommunication technology.

This chapter examines how improved access to telephones, and mobile phones in particular, change daily life and economic opportunities for Ghana's traders in agricultural produce. It focuses on how traders change social, economic, and spatial practices when they acquire mobile phones. Mobile phones are great communication tools for rural-urban traders who move around a lot since they often have no registered business in an office with an address. They need of course to exchange information on prices, supply, and demand across long distances but also are often illiterate or semiliterate and therefore prefer to communicate verbally instead of having messages written for them. Yet the expense of service remains high, and vast rural areas are still without coverage (see figure 4.1), creating a digital divide across socioeconomic strata and by locale.



So despite its many advantages, I argue that unequal access to teleservices and especially mobile communication in Ghana marginalizes the remote and the poor relative to the urban and rich, thus eroding the positive impact of telecommunications on economic growth. To provide on-the-ground evidence for these arguments, I discuss the strategies traders employ when they start using telephones and the barriers they face in adopting the new technology. I describe how and with whom rural-urban traders communicate to organize the purchasing, transportation, and marketing of goods, and how they adapt these strategies to an improving, but still inadequate, telecommunication infrastructure.

This chapter is based on my research in Ghana before and after the telecom revolution (Overå 1993, 1998, 2005, 2006). Knowing about the “before” situation is an advantage, since once telephones are available they quickly become taken for granted (table 4.1). I, together with research assistant Charlotte Mensah from the University of Ghana, interviewed traders. She often functioned as an interpreter, mainly in the big wholesale markets and small shops in Accra, and in Tema Fishing Harbour. Through previous research we were familiar with the rural areas in which the interviewed traders purchased goods such as fish, onions, salt, tomatoes, and maize. The interviews were informal conversations at each trader’s work place and lasted from a few minutes to two hours. The traders were selected through a snowball strategy.

The Rural-Urban Market Chain and Traders’ Information Needs

Ghanaian marketplaces are important institutions and well organized according to gender and ethnicity with leaders for each commodity group (Robertson 1984; Clark 1994; Chamlee-Wright 1997; Overå 1998). Agricultural produce often is brought to local or regional markets by the producers themselves, but long-distance large-scale trade is mostly in the hands of itinerant wholesalers, or “travelers” (Clark 1994). Wholesalers in food stuff are for the most part women, except in some commodities like meat and onions, which are often sold by male Muslims from northern Ghana and neighboring countries. The wholesalers purchase goods from the producers in rural supply areas and organize transportation to regional wholesale markets, or to urban wholesale and retail markets. There the goods are sold to wholesale retailers, who resell to retailers or to consumers and to petty traders, who retail in even smaller quantities or hawk in the streets. The market system can thus be viewed as a predominantly female hierarchy

Figure 4.1

Telecommunication service access in Ghana, 2006. Sources: <http://www.ghanatelecom.com/gh>, <http://www.spacefon.com>, and <http://www.gsmworld.com>. Population data: The Center for International Earth Science Information Network (CIESIN). Map made by Kjell Helge Sjøstrøm, Department of Geography, University of Bergen.

Table 4.1
Utilization, Benefits, and Adaptation Barriers of Telecommunication

Utilization of telecommunication	Benefits of telecommunication	Barriers against adoption of telecommunication
Substitute traveling or messengers with calls	Save time and transportation costs	Infrastructure: inadequate supply of landlines and mobile phone coverage
Monitor and supervise trade partners and employees in distant locations	Wider geographical reach	High costs (landline subscriptions and mobile phone units)
Take orders from customers and inform them when supplies are available	Better security on long journeys	Long waiting lists for landlines and poor services by telecom service providers
Make orders from suppliers and receive information when consignments are ready	Coordinate activities more efficiently	Calls are cut due to congested networks (too many mobile phone subscribers per network)
Discuss prices and demand situation in distant markets	Better timing of supply and demand (higher prices and less spoilage)	Crime (e.g., mobile phones stolen, lines tapped by illegal users)
Arrange for transport and delivery of goods	Offer greater variety of goods	Many areas do not have coverage (phones are of no use to do business in many rural areas)
Receive updates, complaints about quality, delays	Be more available	Few people have phones (the number of customers and suppliers phone owners can call is limited)
Communicate with children/spouse/maid at home	Improve customer service, attract more customers	Face-to-face communication is required in negotiation of large contracts, credit requests, and exchange of sensitive information
Communicate with distant relatives and social contacts	Build a good reputation	
	Easier to combine work and family life	
	More funds and time available for expansion and diversification of business	

Source: Fieldwork, Accra, 2001 and 2003

where a small wealthy elite operate on a large scale on the top and a majority of poor petty traders struggle at the bottom of the pyramid (Robertson 1984).

Goods pass through numerous hands on their way from the producers to the consumers. The trade system can be viewed as a commodity chain in which traders act as links adding value to the product throughout each stage (Dicken 1998). It is also an "information chain" in which transactions are socially embedded. Informal institutions like the court of the market leaders (Queen Mothers or *ohemma*) and traders' unwritten "rules of conduct" are important providers of risk-reducing mechanisms in this "imperfect market" (i.e., North 1995). The system is based upon trust and traders' per-

sonal reputations are their most valuable assets (Fafchamps 1996; Overå 2006). Obviously, personal communication plays a pivotal role not only in practical terms but also is the glue maintaining the institutions of the market.

Before—and still for those without access to telecommunications—the main mode of communicating information apart from face-to-face contact personally or through an intermediary messenger, was—and still is—written messages, either delivered by hand (by an intermediary messenger), sent as a letter (which takes days), as a fax, or since 1995 as an e-mail. Since the majority of traders depend on others for the writing of their messages, there is always a risk that the information may be misunderstood or misused by the writer or the carrier of the message. Most traders thus spend enormous amounts of time and money traveling on bad (in rural areas) and congested (in urban areas) roads to make orders, ask for credit, collect debts, inquire about whether goods are ready, and so on. Segbefia (2000) estimates that 23 percent of all travelers on Ghanaian roads travel to exchange information.

Traders communicate often across very long distances, often while being on the road, and thus acutely experience the dilemmas of time-space temporality (see Harvey 1989). They constantly face the problem of needing information from a different place than where they are situated physically at a particular moment in time. From the rural supply end of the chain, they need information about purchase prices, the quality and quantity of goods, and the “trader-density” in particular villages or regional wholesale markets. From the urban market end of the chain, traders need information about the flow of goods influencing prices according to current demand in particular markets. The better informed a trader is about these multiple factors throughout the rural-urban market chain, the more sensible decision he or she can make with regard to where, when, how much, and at which price it will be most profitable to purchase and sell goods.

Aminuzzaman, Baldersheim, and Jamil (2003) use the notion of “information poverty” to denote a situation in which “inadequate telecommunications infrastructure leads to limitations on the choices available to individuals because high costs of telecommunications makes it too costly to seek out information about alternative courses of action” (p. 329). Hence, when traders acquire mobile phones, information asymmetries can be reduced, even when the parties do not meet physically (provided that they trust each other and are willing to share information). In the next section we see how traders reduce costs and risks and achieve advantages when they replace personal travel and intermediation with exchanging information via phone calls.

New Trading Practices: Phones and Phoning

No statistics are available on phone ownership among informal traders. A survey conducted in 2003 in Accra of one hundred informally employed men and women (at

both low and high income levels) found that six had a landline at home, seventeen had a mobile phone, and two had both (Overå 2007). There was no clear correlation between gender and phone ownership, but income was decisive. In our interviews with food traders, this impression was confirmed: large-scale wholesalers more often owned phones than those operating on a medium scale, whereas none of the small-scale retailers did. With regards to income differences, the monthly incomes of maize retailers were often as low as 200,000 cedis/USD 23 while maize wholesalers' monthly incomes could be 2 million cedis/USD 233 and more. Likewise, an onion retailer could earn as little as 400,000 cedis/USD 46 a month while an onion wholesaler could earn 4 million cedis/USD 465 (Overå 2006). It is therefore not surprising that the affordability of phones is highly unequal.

Generally, the traders wish to own and use a phone but cannot afford it. Some receive mobile phones as gifts from relatives abroad, but they rarely use it for anything other than receiving incoming calls from those relatives. Even those who can afford the purchase of a mobile phone (at approximately USD 100) choose not to use it regularly. A reason for this is the considerable difference in call charges of mobile phones and landlines. Compared with the call charges of landline phones (regional 150 cedis/USD 0.016 and long distance 200 cedis/USD 0.022), a mobile phone call costs between 1600 cedis/USD 0.17 (within the same network) and 2700 cedis/USD 0.30 (to other networks) per minute. From mobile networks to landlines a minute's call costs 2100cedis/USD 0.23; and from landline to mobile networks 1800cedis/USD 0.20 (in 2005). Many therefore only receive incoming calls on their mobile phones, which is possible even if their prepaid card has run out of units, while making their own calls from a communication center. Another strategy invented to overcome high call charges is "flashing," whereby one avoids spending money on talking time by having an agreement to be called back after the ringing signal. Often, the ringing has a specific meaning, for example "I have arrived," so that calling back is unnecessary.

When mobile phone call charges are expensive and installing a landline at home is a bureaucratic process and unaffordable for most people, the "com centers" play a very important role (see Falch and Anyimadu 2003). These are private enterprises and can be large and well equipped offering a variety of services including Internet, but many com centers are simply a 2 × 2-meter shed inside a marketplace with one landline phone. Those working in the com centers provide an important service in delivering messages or fetching persons called. According to the estimates of interviewed com center staff, about 30 percent of the traders' calls are business related while 70 percent are family related. Obviously, privacy is not guaranteed when communicating through com centers. The possibility to control "talking space," keeping both personal and business information secret to unwanted listeners, was mentioned as an important advantage with mobile phones.

Reducing Information Poverty

Traveling to buy maize from a farmer in an area without telecommunications, a trader cannot call in advance to make orders or gather information about the current supply situation. Neither can she take the latest information about urban prices and demand into account when negotiating purchasing prices with the farmer once she has arrived in the village. The trader (and the farmer) will have to rely on information circulating by word of mouth. Alternatively, to obtain updated information from contacts in the city, the trader can travel from the village to the nearest place with mobile phone coverage or a com center with a landline. Then she must travel back and buy the goods. This is expensive, both in terms of time and travel costs. Another alternative, of course, is for the trader to quit often long-standing supply relationships with farmers in “unconnected” remote areas, where personal trust and credit relationships have been established over time, and buy goods in “connected” areas instead. Rural areas that have telephone lines installed thus get more attractive as sources of supply. For example, a salt trader buying salt in the coastal towns of Ada and Nyanyano explained that when telephone lines were installed in Ada, she could suddenly call her suppliers (via a com center) and order salt. Instead of her traveling back and forth to Ada, the suppliers could bring salt directly to her in Accra. The result was that she reduced salt supplies from Nyanyano and increased her trade with Ada. However, when Nyanyano also got a telephone line and a com center, she adapted the same strategy as in Ada.

Without access to phones, traders must rely on information from colleagues returning from market trips, which may quickly become outdated since the supply and demand situation is volatile. The alternative is to travel to places where one has had luck before and hope for the best. Auntie Gladys is a seventy-five-year-old “garden egg” (eggplant) seller outside the Makola market. She has long experience and a wide contact network. She is too old to travel herself, so her daughter travels for her to Kumasi, Techiman, Sunyani (see figure 4.1), and many other wholesale markets in the Brong-Ahafo and Ashanti regions. Gladys gets information from colleagues returning with eggplants to Accra every day, but even if she knows that her daughter is on her way to a market she just heard is saturated with eggplant buyers or to a market where the last supplies just finished, she is not able to convey these vital messages. Her daughter thus often ends up traveling around to many places to find a market with fewer traders, more garden eggs, and lower prices. This takes time, costs money, and is exhausting. Gladys says: “I always pray for her safety. I have had serious accidents myself. This work is life threatening!”

Elizabeth (35 years old) is another garden egg trader traveling to the same areas. Since she has a landline in her house (her husband is the driver of a ministry), she calls various suppliers to inquire about when supplies are ready. They can also call her

directly. Based on this information, she plans her trips. She still has to travel physically, but avoids the laborious searching process, and spends less time and less money on bus fares. Better security and information flow while on the road is mentioned by many as an important advantage, especially of mobile phones. The danger of accidents and robbery is very real on Ghanaian roads where enormous amounts of people and vehicles move day and night to transport goods. Not only does the possibility to call for help in case of an emergency improve security (and calm down worried mothers like Gladys when her daughter is out on a trip), it also makes contract fulfillment more feasible. One driver explained how his customer relations had improved after he got a mobile phone. He frequently experiences punctures or motor breakdowns. After his boss in the truck company equipped him with a mobile phone, the driver could call Accra in the case of such emergencies. The employer can send a new truck to replace the broken down vehicle. The load of perishable tomatoes or plantains can be reloaded, reach the market, and be sold instead of rotting on the roadside. Importantly, the driver is able to call the customer anxiously waiting for her load to arrive, perhaps suspecting that he has driven off to sell it somewhere else, and explain the reason for the delay. And best of all: although the consignment is delayed, it is fulfilled, which makes it likely that the customer will entrust her goods to be transported by the same company again.

Coordination, Monitoring, and Timing

Large-scale traders often coordinate extensive networks of trade partners and employees across vast distances. For example, much of the onions sold in Accra originate from northern Ghana, Burkina Faso, Mali, and Niger. The wholesalers are mostly men often involved in the entire production and distribution process. Mohammed (32 years old) is from Bawku, where he has a wife and children and access to family land where they grow onions (July–November). In addition, he rents land on the outskirts of Accra where hired workers plant and harvest onions (May–August). Together with his uncle and a network of other kinsmen, Mohammed sells these onions (harvested in different locations and ready for market in suitable portions from August to December) at the Agbobloshie market in Accra. They also travel to purchase truckloads of onions in Burkina Faso and Niger.

There are both practical and social problems involved in coordinating a large number of people involved in many different activities—from planting and harvesting to transporting, selling, and extending credit to customers. Mohammed, his uncle, and some other “core persons” in their network therefore acquired mobile phones as soon as coverage was extended to Bawku in 2001. In this kind of trade, which is large-scale, profitable, involves a number of activities in different locations, and extends over more than a thousand kilometers, it goes without saying that mobile phones are very useful

tools. A quite revolutionary effect is that persons located far apart can exchange information almost simultaneously and make collective decisions instantly. The timing of onion supplies into the market is especially important to achieve maximum profits. With mobile phones, the network of traders can coordinate harvesting, packing, and transportation so that the right quantity of onions arrives in Agbobloshie market at the right time (depending on current supply and demand). Monitoring of employee activities also becomes easier. If one of the hired workers in Accra steals from the harvest, this can be immediately reported to the leader of the onion network, Mohammed's uncle, even if he happens to be in Niger at the moment. Being in charge, he can decide on sanctions immediately. Reports (or even rumors) staining one's precious reputation can travel much further and faster with telecommunications, which may in certain situations prevent opportunistic behavior.

In the distributive end of the onion chain, there are also gains to be made by investing in a mobile phone. Mohammed has extended his network of regular customers considerably after getting a mobile phone. He has become much more accessible in the sense that he can be contacted at any time, when he is not physically present at the marketplace, and from a wider radius. Customers call or send text messages from beyond Accra to order onion bags to be sent by bus, or they call from the Accra suburbs about whether supplies are available and avoid making the noisy and dirty trip to the Agbobloshie market. Customers are also encouraged to call and complain if the onion quality is bad. This invokes trust in Mohammed and is good advertisement: sometimes he attracts customers at the expense of traders without mobile phones who cannot offer these services. One precondition is, of course, that the customers also have phones. As a consequence, Mohammed's customers increasingly belong to the "connected" segment of the urban population.

Reconfigurations of Power

Control over information can be decisive for access to resources and contracts. Unequal access to telecommunications can therefore reinforce unequal power relations. In the fishing town Moree near Cape Coast, women are entirely in charge of fish processing and trade, and their role as creditors—pooling profits from fish trade back into the fisheries—is essential. Some women have also invested in canoes, outboard motors, and nets and employ men to fish for them. During the canoe fishery's off-season, external sources of fish supply is vital for fish processors/traders' business. Telecommunications has played an important role in the access of the most privileged traders to the two main external supply sources: by-catch (untargeted species or fish of low quality) from trawlers and imported cartons of frozen fish from companies in Tema.

When trawlers first started delivering by-catch in Moree in the late 1970s, contact between the female traders and the crew on board the trawlers was mediated by a man,

who had a car and frequently traveled to Tema (the trawlers' port) to negotiate consignments of by-catch supply. The participants in the by-catch trade were the richest traders, who were able to pay up front. Many became so rich that they invested in canoes for the purpose of fetching by-catch at high seas. There were no telephones in Moree, but after some time a man with a walkie-talkie working for the trawler by-catch suppliers arrived. He married one of the traders and began contacting the trawlers on the VHF radio to make sure his wife was favored in the supply of by-catch. He made a lot of money this way, especially considering that he had similar arrangements through wives in two other towns. Access to by-catch thus initially reinforced the richest traders' wealth and position, but when access to the new resource could be manipulated through communication technology accessible to one person only, power relations were altered again. Today the trawlers do not call at Moree anymore, but the "walkie-talkie man" and his wife still maintain their contracts with the trawlers. To avoid the social conflicts that their unacceptable strategies caused in Moree, they now land the by-catch in a nearby town.

In 1998, Moree got its first telephone when a pharmacist installed a WILL (Wireless Local Loop) phone in his shop and created the town's first com center (in 2003, there was no telephone line yet and mobile phones were not common because of the high costs and—unlike now—hardly any coverage). For the richest traders, the com center became useful in their ordering of frozen fish cartons from Tema. Instead of traveling to Tema, where they would previously often have to wait for days and nights for supplies and to negotiate prices, they now call via the com center to make inquiries. There are also com centers in Tema. This means that when the large scale traders do go to Tema they can call smaller scale traders in Moree, who do not have the capital to buy imported fish in Tema and therefore buy cartons of frozen fish on credit from the richer traders, and inform them about prices and quantities. Better information flow resulting in easier ways of accessing imported fish supply creates employment and benefits the community as a whole during the local fishery's off-season. However, since it is the richest traders who have capital to invest and therefore have more to gain on improved telecom services, their position is strengthened in relation to the poorer traders. As a consequence, the poor traders' dependence on the rich traders in terms of fish supply and credit is reinforced.

Discussion and Conclusions

Time used and transportation costs are reduced when traders substitute travels with calls, and improves the efficiency and profitability of trade phenomenally. Importantly, even if the mobile phone is the most significant technological innovation, improved access to public telecom services is a more important improvement for the poorest traders.

To own and use a mobile phone is clearly an asset for traders. By reducing information asymmetries, traders are able to reduce costs. Mobile phones not only change traders' social and economic practices but also their position in the market hierarchy. Traders with mobile phones in some instances improve their services, number of customers, and sales at the expense of traders without phones, who may lose out in competition. Telecommunications development thus reduces information poverty, but only for those with access to the new technology.

The growing differentiation between the connected and the unconnected occurs not only between individuals, but also between rural and urban areas and among regions. To illustrate, a souvenir dealer who purchases wood carvings in rural areas said: "Those illiterates in the rural areas are even more 'in the dark' now than before, and less interesting for me to deal with." Increasingly, he makes orders in areas he can call with his mobile phone, and he has even started advertising his souvenirs internationally on a Web page promoting "African art."

Despite the telephone's efficiency, cultural values and institutional constraints in the Ghanaian market can require traveling and face-to-face communication. Place-based and socially embedded face-to-face communication continues to be important in traders' screening of partners' reputation, observation of behavior, and economic transactions. Nevertheless, an enormous amount of traveling to simply exchange practical and nonsensitive information would be avoided if telecommunications was accessible and affordable to the average Ghanaian.

As the empirical examples show, geography and income largely decide whether Ghanaian traders, as well as their suppliers and customers, can benefit from the space-time compression (Harvey 1989) enabled by telecom. The new technology's benefits are often clear at the enterprise level; yet national policy to date puts those in low-density rural areas at a disadvantage, the very places where the bulk of Ghana's agricultural production occurs. This conclusion suggests that governmental resources be directed to reducing the costs of access and use of telecom services, since doing so would benefit the national economy as a whole.

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