

CellBazaar, a mobile-based e marketplace: Success factors and potential for expansion

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Mobile2.0 @BOP vertical study (Version 2.1)¹

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1.0 Introduction

In emerging economies, access to accurate market information can be limited by poor, underdeveloped or even absent infrastructure. Countries are poor, partly because markets do not work well and markets do not work well, partly because of information problems. Isolated and poorly informed farmers, traders and businesses cannot participate in commercial exchanges and, even when they do, they tend to have limited bargaining power. Telecommunication service use can ease such limitations (Jensen, 2007) but infrastructural bottlenecks of many kinds can constrain physical access to markets. Even if a farmer has access to timely market prices, if the produce cannot be taken to the market before it perishes, that market information will be useless. In Bangladesh problems such as flooding, frequent electricity outages as well as urban congestion (CKS Consulting, 2009), serve to compound such problems. This is not so only for agricultural markets, but also for the market for second hand goods, services, and other goods.

Electronic commerce (e-commerce) is the conduct of commercial transactions over electronic networks (OECD, 2002). It has been seen as a way of reducing friction in the marketplace, allowing larger volumes of transactions to take place and effectively expanding markets. It also offers a way of opening up entirely new markets (Mann, Eckert and Knight, 2000; Steinfield and Klein, 1999), allowing smaller and larger marketers to exploit the 'long tail' (Anderson, 2006) of demand for goods or services. In developed economies, although e-commerce does take the form of commercial transactions facilitated over the Internet, e-commerce is now being conducted using mobile networks because of their growing ubiquity. In emerging economies low levels of Internet penetration and the lack of secure payment mechanisms, *inter alia*, have slowed the growth of e-commerce as compared to its take-off in wealthier countries. Meso, Musa and Mbarika (2005) noted that there was little empirical evidence of the success of mobile-commerce in developing markets and that at the time of their research most of the evidence was anecdotal.

As this paper will show, e-commerce is developing based on mobile networks although the forms of e-commerce differ from those being introduced in the developed economies. The phenomenal proliferation of mobile networks in developing economies and the falling profitability of the provision of pure voice services are pushing mobile service providers to explore the potential of the mobile phone to support service applications beyond voice. Mobile telecommunication networks, one of the fastest growing technologies at the beginning of the 21st century, offer the possibility of transforming developing economy markets into more competitive and efficient markets, by providing new e-commerce services that have the potential to reduce transaction costs and increase revenues for traders in the way that initial expectations for e-commerce suggested.

This paper examines the case of CellBazaar, an electronic marketplace (e-marketplace) operating in Bangladesh since 2006, which allows buyers and sellers to exchange information on products and services for sale in the e-marketplace by using their mobile phones. There are various types of applications that can be grouped under the generic term "e-marketplace," however in this paper, we use the term e-marketplace to denote any application that electronically supports commercial transactions at *any* stage in the transaction process.

There are a variety of e-marketplaces operating in the developed (Amazon, eBay, etc.) and the developing (ngPay.com, etc.) world, but the service – CellBazaar – that is the focus of this paper is possibly the first e-marketplace that is accessible by not just for those at the "top and middle" of the economic pyramid, but for those as the bottom of the pyramid as well. In this paper we examine the success factors contributing to the emergence of the CellBazaar service in Bangladesh. We also consider the scope for extending the service to include the payment and delivery functions that would enable the service to support the complete commercial transaction process.

Section two of this paper provides a description of the CellBazaar service, how it works and a brief evaluation of its performance. Section three presents the theoretical framework for this case study of mobile-based e-marketplace and compares CellBazaar with other e-marketplaces. Section four examines the key critical success factors that appear to be contributing to the emergence and popularity of the service in Bangladesh, while section five considers the potential for completing commercial transactions on the CellBazaar platform. Section six summarizes the results of the analysis of CellBazaar and considers its implications for future developments in mobile e-commerce.

2.0 Background

With a population of almost 160 million in 2007 (World Bank, 2008), Bangladesh is the most densely populated country among those with populations larger than five million. Bangladesh’s average per capita income of USD470 was lower than the South Asian average in 2007, and lower than the average for low-income countries according to the World Bank’s 2008 estimates. With three-quarters of the population living in rural areas (Bangladesh Bureau of Statistics, 2009), it is estimated that about 78 percent of the 15-60 age group of the population lives on less than USD2 per day.

Despite this poor economic performance, the telecommunication industry in Bangladesh has flourished in recent years. While the fixed line sector has stagnated, the mobile sector has grown dramatically since 2004 (see Figure 1), owing to intense competition (Khaled, 2008). As a result of this competition, Bangladesh is now among the cheapest countries in the world for mobile service (Nokia, 2009:12; LIRNEasia, 2009a). The industry average revenue per user (ARPU) was USD1.84 in December 2007 (Khaled, 2008). The affordability of mobile services as well as their rapid diffusion into rural parts of the country (Knight-John, Zainudeen & Khan, 2005) has resulted in mobile telecommunication reaching many of the lowest-income earners or the “bottom of the pyramid” (BOP) within the country.

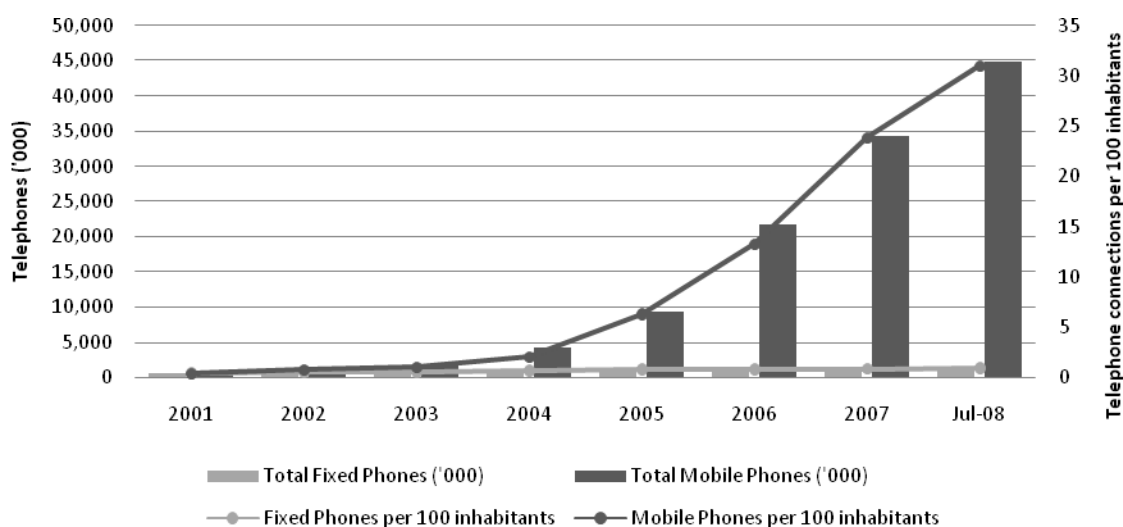


Figure 1: Growth and penetration in fixed and mobile sectors in Bangladesh

Source: Khaled, 2008 (based on BTRC data)

Though the average number of mobile SIM cards in Bangladesh in 2008 was 28 per 100 inhabitants (BTRC, n.d.; IMF, 2008), a survey of teleusers² at the BOP³ showed that by late 2008, as many as 41 percent of those aged 15-60 owned their own mobile phone (LIRNEasia, 2009b). The proportion was the same for the urban and rural users at the bottom of the pyramid. By the end of 2008, there were 44.6 million mobile connections in Bangladesh supplied by six mobile service providers with market shares of: Grameenphone (47%), Banglalink (23%), Aktel (18%), Warid (5%), Citycell (4%) and Teletalk (2%) (BTRC, n.d).

It is in this context that a new e-marketplace using the mobile phone network has been introduced. CellBazaar has been dubbed the “Craigslist of Bangladesh” (Goldman, 2007; Ramey, 2008). It is a mobile application which brings buyers and sellers together in an e-marketplace where sellers and buyers can publish and retrieve information on

² Defined as those who had used any phone (owned by themselves or someone else) in the previous three months.

³ Defined as socio-economic groups D and E more or less corresponding to households with incomes less than USD2 per day.

goods or services. It is a real-time collection of classified advertisements that is accessible through a mobile phone connected to Grameenphone's mobile network. Advertisements can be posted to the system and browsed on a mobile phone using SMS, WAP, or IVR (voice, for buyers only) and through a computer via the CellBazaar website (www.cellbazaar.com).

The most popular method of posting advertisements is via the mobile phone; initially SMS was the most popular access method (Wall Street Journal, 2008), however, currently WAP access is more popular.⁴ Posting and browsing of advertisements can be done by sending the word "sell" or "buy" to a short code (3838); the network responds with numbered lists of options (e.g., 1= new items, 2= used items, etc.) which the user can select by sending a selection using SMS and narrowing the search or providing a better categorization for a post.

The CellBazaar system is only available in English for two reasons. First, the majority of mobile handsets in the country do not have a Bangla (local language) option, especially among BOP users. Second, Bangla posts (even if typed using English letters) are not searchable by the underlying software. To navigate the system, minimal English proficiency is required – the user needs to know a few words to get what he or she wants from the system ("buy," "sell," "TV," "Sony," etc.)⁵ Alternatively, a non-English literate user can have someone else process the post or search and this is providing a revenue-earning opportunity for some entrepreneurs in Bangladesh who are providing this service (Quadir, 2008). An automated voice option (IVR) is also available which allows buyers to listen to a selection of advertisements in Bangla.

Sellers can post their advertisements under a category with a short description and price information. Depending on the seller's phone capabilities (or PC capabilities), a picture of the item can be posted (though only those with the capabilities to view graphic images will be able to view the picture). The seller's mobile number is published with the post and at any time, the post can be deleted or edited. Buyers can browse through the categories of goods and services, filtering by various aspects such as new vs. used goods, wholesale vs. retail (agri-produce only), and by brand and price range. When a buyer finds a product that matches his requirements and price range, the buyer can call the seller directly and obtain more information, settle on a price, and complete the transaction if agreement is reached.

CellBazaar is offered exclusively to Grameenphone's 20+ million customers. Although others can access this e-marketplace through the Internet or using WAP, only Grameenphone subscribers can register to post items for sale.

CellBazaar earns direct revenues through the use of the following platforms:⁶

1. WAP: 50 percent of users come through this platform; CellBazaar gets a share of Grameenphone's browsing fees (BDT0.02/kilobyte)
2. SMS: 25 percent of usage comes through this platform; CellBazaar gets a share of the Grameenphone's SMS fees (BDT 1.15/text message)
3. IVR: 20 percent of usage comes through this platform;⁷ CellBazaar gets a share of the Grameenphone's airtime fees for accessing the IVR platform (BDT3/minute)

In addition, CellBazaar receives the following indirect revenues:

4. A share of Grameenphone's airtime fees on calls resulting from posts (on average a post may generate 20 calls over its lifetime);

⁵ Naeem Mohaiemen (Vice President of Business Development, CellBazaar), interview, Dhaka February 2009.

5. Revenues from targeted advertising by Brac Bank.

In all cases, the revenue share is undisclosed.

The strategy being employed by CellBazaar is to build up "national critical mass" making the service "essential daily tool" and then charge fees for additional services (Quadir and Mohaiemen, 2009:66), thus increasing their revenue channels.

Thus for the user, payment is "pay as you go". Typically, to post an item by SMS, a seller needs to send approximately five SMSs (charged at the standard rate) which costs BDT5.75 (approximately USD0.08) inclusive of taxes. To search, a buyer needs to send a minimum of five SMS, the number depending on the number of advertisements that are viewed.

Various goods and services can be posted according to 69 predefined categories (at the time of writing) ranging from electrical appliances to automobiles to mobile phones, tutoring, rice and cattle (See Annex 2 for listings as on 17 April 2009). The most popular sales category is reported to be mobile phones, specifically used mobile phones which accounted for 85 percent of offers in this category (at the time of writing, Figure 2). As Figure 3 shows, CellBazaar is more popular for selling used items.

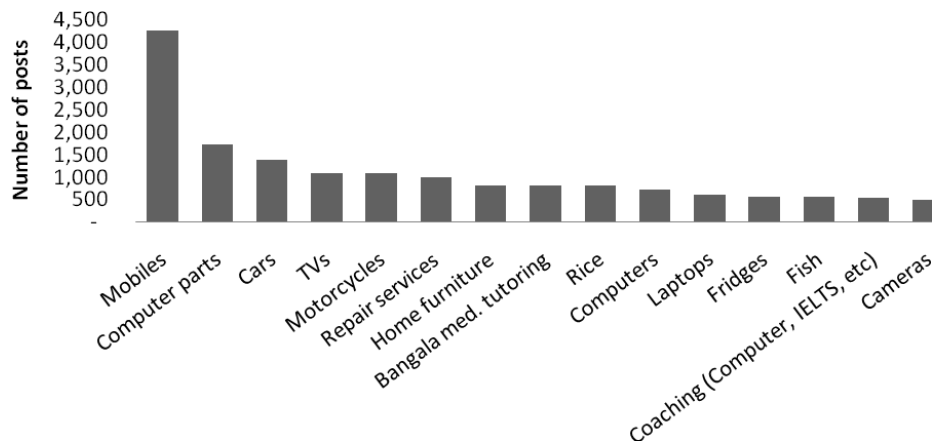


Figure 2: Top 15 CellBazaar post categories, as on 17 April 2009⁸

Source: www.cellbazaar.com, retrieved 17 April 2009

⁸ Approximately 1400hrs, Sri Lanka time

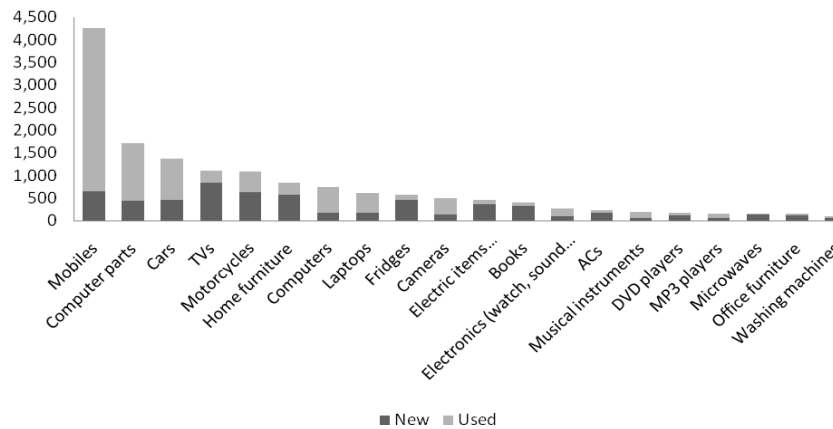


Figure 3: New vs. used items posted on CellBazaar, as on 17 April 2009⁹

Source: www.cellbazaar.com, retrieved 17 April 2009

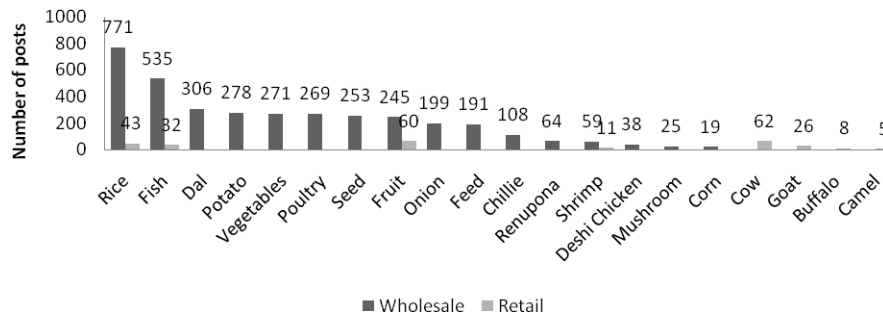


Figure 4: Wholesale vs. retail agri-produce post categories on CellBazaar, as on 17 April 2009¹⁰

Source: www.cellbazaar.com and author calculations; retrieved 17 April 2009

It is interesting to note that communication devices (mobiles, computer parts, TVs, [desktop] computes, laptops) constitute five of the top 15 post categories (Figure 2). Two of the 20 agri-produce categories (rice and fish) also appear in the top 15 post categories. Among those 20 categories, except for livestock, the majority of the posts are in the wholesale category (Figure 4). The wholesale posts tend not to be removed within a few days, whereas the retail posts often are removed quickly.

New post categories are created by the management as the need arises. An automated system filter censors crude comments, gibberish, and other undesirable content, mainly as a precaution; in addition manual filtering is also used to screen such content that the system misses.¹¹

The CellBazaar application has been the recipient of several awards including the MIT IDEAS 2005 competition when Kamal Quadir, CEO and founder, received a prize. The application also won an award at the 2008 GSM

⁹ Approximately 1400hrs, Sri Lanka time

¹⁰ Approximately 1500hrs, Sri Lanka time

¹¹ Naeem Mohaiemen, interview. Dhaka, February 2009

World Congress for the best use of mobiles for development. Quadir claims that CellBazaar is making an operational profit.¹² That could be interpreted as evidence of success.

Another way to assess the success of this e-marketplace service would be to measure changes in price dispersion for goods or services as a result of the introduction of this service. Theory suggests that a decrease in price dispersion will result from improved market information and the associated benefits to sellers and buyers in the market. For example, the impact of mobiles was measured in four Kerala fish markets by Jensen (2007), showing that the adoption of mobiles was associated with a 38 percent reduction in price dispersion across the markets, an increase in fishermen's revenues, a decrease in consumer prices and a reduction in wastage (fish that found no buyers). Aker (2008) studied price dispersion across grain markets in Niger factoring in transportation costs (which Jensen did not). Similarly, Aker showed that the introduction of mobile phones was associated with reduced price dispersion, with the effect being greater when pairs of sellers and buyers in the market were trading a greater geographical distances and when roads were of poorer quality. These evaluations of changes in the market require relatively large data collection exercises over time and work well for commodities such as rice and dal as compared to goods such as used TVs and refrigerators.

In the absence of such data, an alternative means of measuring changes in the market is to track the number of transactions that take place supported by the e-marketplace. In the case of CellBazaar, the transactions take place offline so changes cannot be tracked directly. According to a survey reported by Quadir in Nokia's *Expanding Horizons* magazine (2008:13), "two out of ten sellers surveyed were able to sell their items within ten days of posting." In addition to a survey of users, estimates of the number of transactions can be derived from the number of posts that are deleted,¹³ assuming that the seller will not want to receive further inquiries once a good is sold and that the deletion of a post signifies a successful sale. This method can only be used to estimate one-off items for sale, leaving out wholesale suppliers and service providers who would tend to keep their advertisements up permanently.

The number of users and posts can serve as another indicator of success. By 2009, CellBazaar reportedly had 1.5 million users, and 51,000 registered sellers (Quadir and Mohaiemen, 2009). On average, CellBazaar reportedly receives an average of 90,000 hits per day (Quadir and Mohaiemen, 2009) and over 1,000 new posts per day with 15 percent monthly growth.¹⁴

While initially popular in urban areas, CellBazaar claims that the application has since become popular in rural areas too. By 2008, fifty one percent of posts were from rural areas, according to CellBazaar officials.¹⁵

The next section considers the potential impacts of CellBazaar and other similar e-marketplaces for reducing transaction costs and improving market information for market players.

3.0 Potential Benefits of e-marketplaces

Information and communication technologies (ICTs) can be used to reduce transaction costs associated with a commercial transaction. With the spread of the Internet in developed markets, it was suggested that e-commerce based on the Internet would change the way that companies in developing countries – big and small –transact, by connecting them through the Web but also through specialized networks to international markets. Transaction costs would be reduced and competitiveness would be improved, propelling growth and development. However, this expectation was based on the premise that all companies would have access to ICTs including a cost-effective and reliable telecommunication infrastructure. This expectation was largely unfounded as indicated by Humphrey, Mansell, Paré and Schmitz's (2003) study of e-marketplaces in 2002 which found that businesses in developing

¹² Kamal Quadir, personal communication. February 2008

¹³ Kamal Quadir and Naeem Mohaiemen, interview. Dhaka, February 2009

¹⁴ Kamal Quadir, personal communication. August 2009

¹⁵ Kamal Quadir and Naeem Mohaiemen, interview. Dhaka, February 2009; an analysis of seller locations from www.cellbazaar.com on 17 April 2009 also shows that 53 percent of posts came from outside Dhaka, while 43 from within Dhaka.

countries did not make much use of e-marketplaces, relying mainly on conventional methods to complete their transactions.

Internet access in developing markets is often limited. Thus, the benefits of e-marketplaces, and more generally e-commerce have been limited. However, the widespread proliferation of mobile phones compared to computers in developing countries, especially among those at the bottom of the pyramid (e.g., LIRNEasia, 2009b), may mean that the potential benefits of e-commerce can now be extended to low income earners in developing markets.

There are various types of ICT-based applications which can be grouped under the generic term “e marketplace” including auctions¹⁶, trade leads¹⁷, e-retail¹⁸ and direct buyer/seller links¹⁹ (Humphrey et al., 2003). However, as Humphrey et al. opine, this generalization could imply that *all* applications support on-line buying and selling, and that transactions are actually completed online; as such, in this paper, we use the term to denote any type of application which electronically supports commercial transactions at any level.

Transaction costs can be defined as those costs incurred in making an economic exchange (Singh, 2008). This can include tangible costs such as the cost of transportation incurred in searching for a product as well as intangible costs such as the time and energy used to make an exchange. Hobbs (1997) categorizes transaction costs as comprising: (1) information costs or those costs incurred in determining the availability, attributes and price of good or service, also known as search costs; (2) negotiation or bargaining costs or costs incurred in coming to an acceptable agreement with a trading party; and (3) the monitoring or enforcement costs incurred in ensuring that the terms of the transaction are respected and recourse to appropriate action when they are not.

E-marketplaces can potentially offer several benefits to buyers and sellers. On the buyer side, such applications can reduce buyer search costs;²⁰ with the simple click of a button information on a variety of sellers and goods and services is available. This can lead to an increase in demand for goods and services and an outward shift in the demand curve. Improved information also reduces the ability of sellers to reap monopoly profits (Bakos, 1997), thereby improving the allocation of market resources. When the buyer’s surplus increases at the expense of seller’s profit, sellers are likely to oppose the introduction of e-marketplaces (Bakos, 1997; Picot et al. 1997). However, there are other advantages that sellers can enjoy, especially those that are less well-established in terms of their customer base and their physical location. Other benefits accrue to sellers as a result of the potential of e-marketplaces to lead to market widening and improved market clearing.

On the seller side, e-marketplaces can contribute to a reduction in seller costs by allowing sellers, particularly micro-businesses lacking the necessary resources to run brick-and-mortar shops (rent, employee salaries, etc), to market their wares using their mobile or a computer; this benefit is especially relevant for low-income users in developing markets. Such marketplaces also open up markets for the sale of less popular or long-tail products, because the cost of selling them is considerably reduced (Anderson, 2007). However, exploitation of the long tail of a market also requires sophisticated information processing and logistical capabilities that small and medium-sized enterprises may not have. Nevertheless, an increase in the supply of goods and services associated with an outward shift of the supply curve, together with the outward movement of the demand curve can lead to a fall in prices and an expansion of the market. For example, Jensen’s (2007) study showed that both buyers and sellers

¹⁶ These may include, but not be limited to, buyers placing bids over a given period of time (e.g. the model used by eBay for auctions)

¹⁷ This refers to buyers and/or sellers posting messages to an on-line forum, indicating a desire to buy or sell items. Price information may be provided.

¹⁸ This refers to systems where the e-marketplace provider sells goods or service directly to the buyer, taking on the role of a seller

¹⁹ This may include, but not be limited to, systems where the e-marketplace provider provides direct links from their website to the seller’s own website

²⁰ Ghose (2006) categorizes search costs into two components: external and cognitive; he argues that while e-marketplaces can reduce “external” costs as transportation costs incurred in searching for a product, cognitive costs can increase; nevertheless, overall, there should be a reduction.

benefited from the creation of single large market out of the 35 separate markets as a result of the use of mobiles; in his case, seller prices increased, buyer prices decreased and the market cleared well.

It has been suggested that the potentially negative impact of middlemen or intermediaries can be reduced through the use of e-marketplaces (Wigan and Benjamin, 1995; Picot et al. 1997); better informed sellers can gain (more) direct access to markets as a result of a disintermediation process (Picot et al. 1997).²¹ It has been argued that the lack of reliable information in developing countries gives rise to opportunities for intermediaries to reap monopoly profits from a seller and to charge buyers exorbitant prices.²² However, criticisms of the role of intermediaries often fail to take into account the services they provide such as transportation or the aggregation of sales of goods into larger lots. In addition, even when information flows improve, intermediaries do not always disappear. Instead, research suggests that the functions they perform often change (Sarkar, Butler and Steinfield, 1995; Hawkins, Mansell, and Steinmueller, 1999).

There is a wide range of services that may be provided by e-marketplaces that are similar to CellBazaar and which operate in developed and developing countries (see Annex 1). Such marketplaces vary in the type of products and services offered (commodity vs. non-commodity, heterogeneous vs. homogeneous), the components of the transactions which are supported electronically, and the geographical availability of access to the service. Among the services supported are the following:

- **Search:** The ability to search for goods or services, possibly disaggregated by type of good or service, condition (new or old, if applicable), price and geographical availability. The e-marketplaces in Annex 1 all offer search free-of-charge over the Internet, while standard SMS/GPRS rates are charged for searches via mobile phones.
- **Order:** The process involved in securing an order with the seller before payment for a transaction is made.
- **Payment:** The process of completing a payment electronically, facilitated by the e-marketplace provider. Payment options include credit and/or debit card, direct bank transfer, cheque and gift cards. Some e-marketplace providers offer their own “currency” such as eBay’s PayPal service. PayPal is an Internet merchant service which facilitates electronic payments without disclosing bank details to the seller; funds are sent to a “virtual” PayPal account which can be used as currency for making purchases from websites that support this means of payment.
- **Delivery:** The process whereby goods are delivered to the customer. Although deliveries are usually handled by the sellers themselves, several e-marketplaces offer dispute resolution services in the event that issues relating to payment and delivery arise.
- **Feedback mechanisms:** Facilities provided by the e-marketplace provider which allow the buyer and/or seller to provide feedback on the quality of service. This can take the form of reputation statements or ratings, or a combination of the two, which are accessible to potential buyers and sellers. Such ratings influence a buyer’s or a seller’s ability to conduct business, depending on the rating received.
- **Dispute resolution:** Services offered by the e-marketplace provider to settle disputes that arise in settling payments and the delivery of goods or services. For example, Amazon offers a guarantee service whereby buyers can receive up to USD2,500 of the purchase price, including shipping charges, in the event that a good is not delivered, the condition of the good differs from that expected or described, or the seller fails to provide a reimbursement for a returned good. Clickbd.com offers a policy where the winning bidder is obligated to pay the seller within three days after the auction is closed; violation of this

²¹ Picot et al. (1997) distinguish between “execution-driven” transactions and “consulting-driven” transactions, arguing that the former can often be disintermediated with the use of ICTs, while the latter may not always be, even with ICTs, as they rely on some tacit knowledge that only the intermediary possesses.

²² Islam and Alawadhi (2008) trace the price of beans in Bangladesh through the supply chain, concluding that the price per unit more than doubles by the time it reaches the urban retailer.

policy can result in negative feedback or permanent cancellation of the buyer's membership. BracNet.com offers a similar policy where user membership can be deleted if negative feedback is received. Even if dispute resolution services are not provided, ratings systems can be effective in deterring bad behavior as well as discouraging bad buyers or sellers from joining the market.

E-marketplaces, as defined in this paper, can provide a range of services relating to a transaction; the potential benefits can include market widening and improved market clearing. The next section examines the key factors which have made CellBazaar thus far a workable, if not successful example of an e-marketplace for the BOP among others in Bangladesh.

4.0 Critical success factors

In the light of the foregoing discussion, this section examines several critical success factors for CellBazaar in Bangladesh where it operates as a marketplace for conducting electronic transactions using simple technologies such as SMS, a feature that sets it apart from many other e-marketplaces that are available.

High mobile penetration coupled with low Internet penetration

As indicated in section 2.0, Bangladesh's mobile sector has performed well in terms of connectivity and price since 2004 (Khaled, 2008), growing from a penetration rate of two percent in 2004 to 28²³ percent by the end of 2008. Even at the BOP as many as 41 percent of Bangladeshis (aged 15-60) owned their own mobile phone by late 2008 (LIRNEasia, 2009b).

In contrast, Internet penetration rates in Bangladesh are very low. At the country level, Internet penetration was 0.1 percent at the end of 2007 (ITU, 2008). According to the LIRNEasia survey of teleusers at the BOP, only 0.6 percent of the BOP (aged 15-16) had ever used the Internet, while 53 percent had not even heard of the Internet (LIRNEasia, 2009c). The weakness of conventional Internet access in the country strengthens the business case for a mobile-based e-marketplace model.

Given the low level of access to the Internet, a situation common in many developing countries, conventional web-based e-marketplaces are not accessible to the majority of the population, much less the BOP. Even if mobile-web platforms are available, their use is limited to those with WAP/GRPS-enabled handsets. Not a single BOP mobile owner in Bangladesh had accessed the Internet using their mobile as of late 2008 (LIRNEasia, 2009b). Given that the majority of respondents to the LIRNEasia survey had spent less than USD50 on their mobile handset (less if it was second hand), it is unlikely that those handsets would have been web-enabled. For an e-marketplace to be successful in this kind of environment, it must be easily accessible to potential users.

The introduction of an e-marketplace that is accessible using SMS (as well as IVR) platforms has the potential to revolutionize the way in which markets can be accessed. The millions of users with access to mobile phones with minimum capabilities achieve instant access. Such platforms expand the number of potential buyers and sellers in the market, but as indicated by Mansell and Jenkins (1992), the benefits will differ depending on the specific circumstances in which e-marketplace trading is conducted.

Affordable service

Meso, Musa and Mbarika's (2005) study of the influences of mobile adoption in Sub-Saharan Africa suggest that high levels of mobile adoption are a necessary but not a sufficient condition for the widespread adoption of mobile-based e-commerce in developing countries. Affordability and perceptions of and the actual reliability on the technology are also important. In Bangladesh, affordability criterion is satisfied, with BOP teleusers able to purchase handsets for as little as USD 25.²⁴ Furthermore, as mentioned above, Bangladeshi mobile service providers offer some of the lowest mobile tariffs in the world (LIRNEasia, 2009a; see also Table 1) with the

²³ Author calculated based on subscriber data reported by the Bangladesh Telecommunication Regulatory Commission (BTRC) and population figures reported by the IMF (IMF WEO Database, October 2008)

²⁴ Second hand handsets among the 25th percentile were purchased for less than USD24.46

monthly total cost of ownership²⁵ for a low user being less than USD5²⁶ (Nokia, 2009:12). Low SMS charges (Table 1) mean that the cost of searching for or posting an item for sale using SMS are also very low.

Table 1: South Asian prepaid SMS charges,²⁷ February 2009

	Afghanis-tan	Nepal	Bangla-desh	Pakistan	India ²⁸	Bhutan	Sri Lanka	Maldives
On-net	0.048	0.013	0.014	0.013	0.02	0.021	0.009	0.015
Off-net	0.048	0.025	0.014	0.013	0.02	0.021	0.018	0.039

Source: LIRNEasia, 2009a

Exclusively partnered with largest operator

Unlike many e-marketplaces that are operated independently and are not functionally associated with an other business, CellBazaar partners with Grameenphone to deliver the SMS/WAP/GPRS-based service. This exclusivity with one operator prevents mobile subscribers of other operators from posting items for sale, but not necessarily from viewing posts. CellBazaar's decision to offer its service exclusively to Grameenphone subscribers enabled it to benefit from the largest mobile service provider subscriber base in Bangladesh and from synergies arising from Grameenphone's strong commitment to economic and social development. According to the mobile company's website, it follows the principle that "development is a journey, not a destination;"²⁹ in line with its considerable corporate social responsibility (CSR) portfolio. The company was the originator of the Greemanphone rural Village Phone program, initially a core aspect of its business mandate, but now a part of its CSR portfolio (Knight-John, Zainudeen and Khan, 2005). In light of the success of the Village Phone program, the association of CellBazaar with the "Grameen" brand which is recognized and trusted even in rural areas as a result of its association with Grameen Bank, enhances the users' trust in CellBazaar and encourages the e-marketplace adoption by those on lower incomes.

Entrepreneurial culture

Research suggests that culture plays a role in the adoption of e-marketplace services such as CellBazaar. For example, a comparison of m-commerce adoption in the UK and Hong Kong confirmed that the culture variables influenced the use of and attitudes towards m-commerce applications (Harris, Retie and Kwan, 2005).³⁰

LIRNEasia's survey findings indicate that as many as 72 percent of BOP mobile owners in Bangladesh use their mobiles on a daily basis for "financial, business or work-related" communication (Figure 5). This result is considerably higher than any of the other countries in the study. Interviews indicated that there is keen interest among Bangladeshi BOP teleusers in ways to "make more money" (CKS Consulting, 2009). The mobile is seen not only as a "social" utility but also as a tool for making money and it is very likely that CellBazaar's success benefits from this entrepreneurial culture.

²⁵ Includes depreciated handset cost, service charges and tax.

²⁶ The average for the 80 countries studied was USD 13.16

²⁷ Prepaid per minute charges of the cheapest prepaid package (based on initial connection charges) of the largest operator (based on market share) in each country.

²⁸ Refers to local tariffs only; national rate = USD 0.031

²⁹ <http://www.grameenphone.com/index.php?id=78>

³⁰ Though as the authors point out, pricing differences between markets were not accounted for.

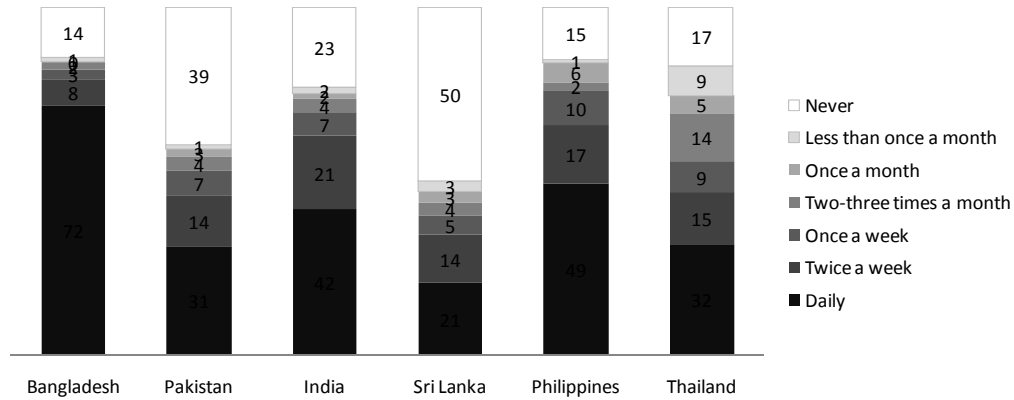


Figure 5: Use of the phone for financial, business or work-related purposes (% of BOP mobile owners)

Source: LIRNEasia 2009b

In addition to the factors discussed above, a final factor may be at play. While the technical requirements for CellBazaar have proved complex (Quadir and Mohaiemen, 2009), the user interface or experience has been intentionally kept simple. In doing this, tradeoffs have been made in the product design (e.g., forgoing a feedback mechanism;³¹ using menu-based as opposed to keyword-based searches on the SMS platform, etc) in order to make the service usable on the most basic phone and thereby by the largest possible user base. As the technology platforms evolve and user base expands, additional features and capabilities may be added on, for example feedback mechanisms may be added onto the WAP or web platform, etc. Similarly, as this happens, additional components of the transaction may even be brought into the system. The following section explores the possibilities of a service such as CellBazaar being expanded to include other aspects of a transaction.

5.0 Potential for incorporating more of the transaction into the system

CellBazaar’s e-marketplace only makes the “search” component of a transaction available, although the mobile phone is also used in the negotiation component (to make first contact). CellBazaar is not involved in the negotiation or subsequent stages of the transaction (Figure 6).



Figure 6: The role of CellBazaar in a transaction

³¹ Which was included in the original design (Quadir and Mohaiemen, 2009).

In the case of goods, additional stages in the transaction would involve payment, arrangements for delivery³² and monitoring, whereas in the case of services, this would involve only payment as physical presence is still required for delivery (except in the case of e-services). In the more complex case of goods, where the buyer and seller need not necessarily meet, all stages of the transaction, except actual delivery, could be capable of being completed using electronic networks. The possibility of expanding an application such as CellBazaar to enable completion of the transaction on the mobile platform in a way that might be similar to the service offered by eBay are considered in this section. Such a development would be expected to improve the efficiency of more stages of a transaction between distant parties.

Problems with shopping in e-marketplaces

Shopping on an e-marketplace is affected by two problems due to the asymmetric information that exists between sellers and buyers. The former have superior information on the goods that are on offer as compared to the latter. Sellers have the incentives to falsely represent a good; that is adverse selection creates an incentive to suggest it to be of higher quality than it is or that it is in better condition than it is in order to secure a higher price. Sellers may also have incentives to act badly after the buyer has made a payment by delaying delivery, not responding to customer complaints, etc., as a form of moral hazard (Resnick, Zeckhauser, Swanson and Lockhead, 2002). These potential problems mean that potential online shoppers may refrain from engaging in online transactions (Teo, 2006). Although, in the case of new and standardized (branded) goods, adverse selection incentives may be less pronounced (Resnick, et al., 2002; Teo, 2006), this remains a problem in a marketplace like CellBazaar's where many of the goods on offer are both second hand and less standardized.³³

The importance of trust

Trust can be loosely defined as confidence in the reliability of a person or system (Giddens, 1990:30). The need for trust arises from a lack of information on and understanding of the characteristics of an individual or the workings of a system (Giddens, 1990:33-36) and trust has been shown to be a key factor in facilitating commercial transactions (Liu, 1996). In the case of e-commerce, where transacting parties may not know each other, may have never met or spoken, trust becomes even more important. As Liu notes, the move from face-to-face transactions to technology-mediated transactions implies that higher levels of trust are needed (1996:34). Siau, Sheng and Nah (2003) have shown with respect to computer as well as mobile-based e-commerce that there are several dimensions of trust that are needed for e-commerce transactions: trust in the seller; trust in the buyer; trust in the electronic network; trust in the e-marketplace, etc.

When e-commerce supports all stages of a transaction, the buyer and seller should not have to meet or speak. Resnick and Zeckhauser (2001:2) make an interesting observation about e-commerce on the Internet:

“What is surprising is the vast shuttling of both new and second hand goods among distant strangers on the Internet, through such mechanisms as eBay and the Yahoo auction site. Buyers, who must pay before inspecting or receiving their items, must put considerable dollars at risk.”

Despite the fact that transactions are between distant strangers, thousands of transactions take place using e-marketplaces such as eBay every day among parties who do not know each other. This suggests that there is sufficient trust between the parties for transactions to occur, and that the e-marketplace provider can play an important role in building trust.

³² In the case of a good, delivery will take place physically, i.e., offline. Some services may be delivered on the system (e.g., tele-tutoring), however in the case of the kinds of services offered by CellBazaar sellers, it is likely that delivery will still require face-to-face interaction.

For example, although Internet auctions have none of the characteristics that help to build trust in conventional face-to-face transactions,³⁴ Resnick and Zeckhauser (2001) suggest that “trust among strangers” is generated by a system of reputation-building based on feedback mechanisms which allow the process of transacting to establish “reputation” based on previous buyer and seller experience which is made visible to other potential transacting parties.

Pre-transaction concerns and options

Unlike the case in a physical transaction, the buyer is unable to inspect a good as would occur in a traditional transaction before confirming a purchase. As a result, the potential for adverse selection is high, which may lead the buyer not to trust the seller. The use of a feedback mechanism to build reputation, similar to that employed by eBay could help to address this problem in an e-marketplace such as that provided by CellBazaar. Even if each seller has just a few buyers, and they are dispersed, a feedback mechanism would allow buyers to see other buyers’ feedback on the seller using comments or numerical ratings. A buyer could then record bad or good experiences on the seller’s feedback page and the information could be distributed to potential buyers. Resnick et al. (2000) argue that as long as users *perceive* the reputation system to work, bad behavior will be deterred and bad sellers will be discouraged from joining the market. The threat of negative feedback for bad behavior has the effect of regulating the sellers’ behavior. In this case, the seller has to incur an initial cost to start selling and establishing a reputation.

There is the possibility of a seller creating a fresh profile, wiping the slate clean especially in Internet e-marketplaces since a valid email address and a basic registration requirement can be met using a false identity. In CellBazaar’s case, a new mobile connection would be needed which is not very expensive, but the registrant’s identification would need to be verified according to government regulations, at least in the case of Bangladesh. Even without the verification requirement, it is easier and less costly to obtain a new email address than it is to obtain a new SIM card.

The Resnick et al. (2002) study also shows that reputation matters more for “riskier” goods, that is, higher value, less standardized used items. A partial technical solution that exists on CellBazaar is the option to upload and view photographs of a good being advertised, so that a potential buyer can inspect it. However, this requires that both the seller and the buyer have access to advanced mobile or some web capabilities.

Payment concerns and options

Trust concerns with respect to completing payments on the e-marketplace system involve both technical and policy aspects. The seller has to be able to trust that the buyer will make the payment when the good is delivered; the seller has to trust the mode of payment (e.g., a cheque may bounce after delivery). The buyer has to be able to trust that the seller will deliver the good if a payment is made. This suggests that neither party will want to be a first mover, given the risk of non-completion of a transaction.

Some e-marketplace operators have overcome this issue by introducing a (trusted) third party guarantor to reassure both parties. The buyer issues the payment to the third party guarantor; the seller then is able

³⁴ (1) Locality of the transaction: Transactions that take place locally (most commonly the case according to the authors) permit inspection of the goods, allowing the buyer to ascertain the quality of the good. (2) Frequency of interaction with seller: Frequent interactions with the same seller allow trust to be built up over time. (3) Local reputations: Peers may provide buyers with knowledge about the seller. (4) Seller reputation in other contexts: Reputations can be “borrowed” from other contexts (e.g. the seller has a good reputation in a personal context, which he would not want to jeopardize, thus signaling trustworthiness). (5) Seller’s duration of operation: Sellers’ existence over many years allows it to build up a reputation. (6) Reputations borrowed from others: Associations with other (trusted) individuals or organizations provide the seller with greater reliability in the eyes of the buyer. (7) Brand names: Associations with other (trusted) brands similarly indicate reliability. (8) Large outlays: Sellers may signal “reliability” by making large outlays (e.g., on a showroom) indicating that they have sufficient resources.

to deliver the good. Once the buyer confirms that the good has been received or otherwise accepts the responsibility, the third party guarantor then releases the payment to the seller (

Figure 7).³⁵

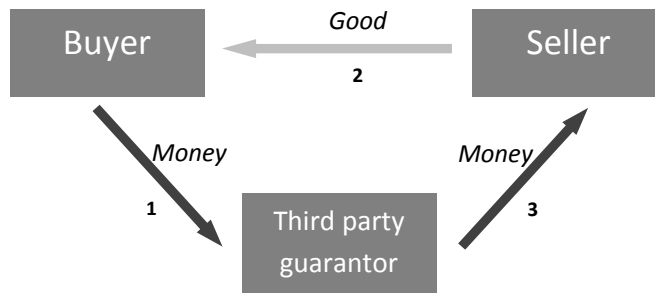


Figure 7: Overcoming trust concerns in transactions through third party guarantors

The third party guarantor may be a credit card company, a money broker (e.g., Propay, Paymate on eBay), or the e-marketplace operator itself. For example, Amazon and eBay both offer account systems where the seller must open an “account” with them which is connected to the seller’s bank account and all transactions transit through this account. eBay also offers escrow services, but according to Resnick and Zeckhauser (2001), these are rarely used. Buyers and sellers may also want to track payments, assure themselves about the security of credit card details, purchase protection against risk (or insurance), and ensure prompt payment.

In the case of CellBazaar, the company aims to provide an e-marketplace that is accessible to a wide range of Bangladeshis, including those at the BOP. In most developing countries and, in particular, for the BOP, access to bank accounts and/or credit cards is poor. At the BOP, in Bangladesh 29 percent of respondents of the LIRNEasia survey had access to a bank account (broadly defined as some kind of bank account within the household and not differentiating between current and savings accounts) and three percent had access (similarly defined as held by someone in the household) to a credit card. On the other hand, 41 percent owned their own mobile, and an additional 19 percent had access to a mobile within their household. These kinds of numbers improve the business case for mobile payment and banking applications in the developing world and imply that a logical way of facilitating payments on the CellBazaar e-marketplace would be through a mobile payment system.

Secure mobile payment systems have been tested and implemented in several Asian countries, most notably in the Philippines. Mobile users (who subscribe to the networks which provide payment systems) can send money from one mobile to another and make other payments through a simple SMS, for a small fee.³⁶ Money can be put into or taken out of the system through local agents.

³⁵ In fact this is the case in *all* money transactions that take place in an economy. As Giddens points out in economic transactions, by exchanging money tokens (guaranteed by the state) instead of engaging in barter exchanges, the requirement for trust in the other party is replaced with trust in an “abstract system,” guaranteed by a third party (1990).

³⁶ For example, a G-Cash user is charged 1% of the transaction value for sending money (<http://gcash.globe.com.ph/subsectionpagearticle.aspx?secid=25&ssid=43&id=86>)

Although the technology for these systems exists, which can be tweaked to suit a country or operator's requirements, the two major barriers to successful implementation are uptake and regulation. Even in the Philippines, usage of mobile payments appears to be very low among those at the BOP. Just four percent of the BOP had used a mobile payment system in the Philippines, of which just over half used it regularly (LIRNEasia, 2009b). Although there is widespread familiarity with mobiles, SMS and electronic reloading in the Philippines, awareness of mobile payments at the BOP was very poor. The uptake of mobile payments in Bangladesh might similarly be low as a result of this lack of familiarity.

The absence of a clear policy framework is also a barrier for the introduction of mobile payments. Mobile payment systems can blur the lines of responsibility between mobile operators and banks and between the authority of telecommunication and financial service regulations. Clear guidelines are required as to the functions a mobile operator can and cannot perform (e.g., whether they can accept deposits like conventional banks) in this context. The Bangladesh Bank has shown movement on enabling operators to provide mobile payments since issuing draft guidelines in 2008. The Bangladesh Bank in October 2009 "approved the launch of an electronic prepaid card system that will have a mobile payment option" (Hasan, 2009). The project is due to begin implementation by April 2010; according to reports, Banglalink (the second largest mobile operator) has entered into a collaboration with Dhaka Bank to facilitate inward remittances (The New Nation, 2009). Beyond this, little information is publicly available on this thus far at the time of writing.

Post-payment concerns and options

Once a payment has been made, there are further trust concerns and infrastructure challenges that need to be addressed. The buyer has to be assured that the seller, after the payment has been made, will ship the good within a reasonable timeframe and that the seller will respond if the buyer has a complaint after receipt of the good, that is, there is a potential problem of moral hazard. As indicated above, Resnick et al. (2002) suggest that a reputation system can address this problem as well as the problems associated with the risk of adverse selection.

As discussed in section 3, some e-marketplaces offer basic dispute resolution services, such as providing negative feedback, cancellation of accounts, etc. This might be an option for e-marketplace providers seeking to build on applications such as those offered by CellBazaar.

Infrastructure limitations are also important factors in a country like Bangladesh. For successful e-commerce, a reliable, secure and cost-effective delivery mechanism is required with tracking options.³⁷ Bangladesh has private courier services but these serve mainly corporate users, and are unlikely to be affordable for those at the BOP involved CellBazaar transactions. The national postal service is an option for delivery of goods but its reliability may be questioned by users.

The experience of the US Postal Service in the age of the Internet and email³⁸ could suggest an opportunity for the Bangladeshi postal service to innovate. It currently has a "value pay post" facility (cash on delivery) used by a few companies which offers an opportunity for the buyer to pay for the good upon delivery and the postal service to pay the seller thereafter.

In order to expand a service such as CellBazaar to incorporate more or all parts of a commercial transaction, problems associated with e-marketplaces need to be overcome, with solutions that are relevant not just for developing markets, but the BOP within them. While the technology problems are relatively tractable, the policy and infrastructure problems remain. The biggest challenge to expanding CellBazaar in a country like Bangladesh is

³⁷ However, whatever the delivery services employed, there may be limitations on size and content; given the nature of some of the basic goods traded through CellBazaar (e.g., livestock) regular face-to-face delivery options may be required in any case.

the delivery aspect. Without a reliable, secure and cost-effective delivery system, transactions will be geographically limited. Nevertheless, it does appear that access to geographically unlimited market information is contributing to improved market efficiency which is a positive step towards more fully introducing e-marketplace services.

6.0 Conclusion

There is substantial potential for mobiles to transform e-commerce in developing countries by reducing transaction costs associated with all stages in a transaction. This could give rise to many potential efficiency benefits. Thus far, the limitations in Internet access and the absence of secure payment mechanisms, *inter alia* have precluded the widespread adoption of e-commerce applications in developing markets.

The case of CellBazaar demonstrates a working form of e-commerce that is well-suited to developing markets, linking buyers and sellers of many kinds of goods and services in all parts of Bangladesh. The simple mobile application may be a rudimentary and partial solution, but it has been taken up by at least 1.5 million Bangladeshi mobile users by mid 2009, including many of the rural poor.

The factors that have contributed to its success include the high level of mobile access in the country (even among the rural poor) when the service was launched, the low cost of using the service (for buyers as well as sellers), the exclusive partnership with the largest mobile operator, the entrepreneurial culture in the country and compromises made on design to enable simplicity.

While CellBazaar is not the only e-marketplace in Bangladesh, despite its apparent success, CellBazaar is the only one which appears to be accessible to the BOP, among others. In this regard, perhaps the most important success factor is its exclusive relationship with the largest mobile service provider in the country and its association with one of the most widely recognized brands in the country. That the brand is strong enough to be propelled into rural markets without major advertising campaigns,³⁹ although the company has used “grassroot street marketing” (Quadir and Mohaiemen, 2009: 69) to push the service out to rural users.

Future empirical research would be needed to assess the potential economic impacts such as reduced price dispersion, increased seller profits and consumer welfare. This type of analysis would apply to markets for standardized commodities, rather than to the full range of unstandardized products and services that is available.

In order to extend an e-marketplace system like CellBazaar’s to include the complete stages of a transaction, issues of trust, infrastructure and policy will need to be addressed and , in the case of Bangladesh, it is likely that infrastructure and policy issues will pose the largest challenges.

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Annex 1: Comparison of e marketplaces

	Cell Bazaar ⁴⁰	Craigslist ⁴¹	Amazon Marketplace	eBay	Clickbd.com ⁴²	bracNet	ngpay ^{43, 44}	SNX India	e-Choupal
Start of operation (year)	2006	1996	2000	1995	2005	Not specified	2008	Dec 2007	2000
Operating country head office	Bangladesh	USA	USA	USA	Bangladesh	Bangladesh	India	India	India
Type of application	Trade leads (classifieds),	Trade leads (classifieds),	Trade leads (classifieds) direct buyer/seller links	On-line auction; direct buyer/seller links Trade leads (classifieds),	On-line auction; trade leads (classifieds),	Trade leads (classifieds),	e-retail	On-line spot market	Trade leads (classifieds), ⁴⁵
Geographical availability of service	Local	International	International	International	Local	Local	Local	Local	Local

⁴⁰ Only available to Grameenphone subscribers

⁴¹ Source: <http://www.craigslist.org/about/factsheet>

⁴² According to its website, over 90 percent of all listed items gets sold on ClickBD.

⁴³ According to its website, ngpay has become the fastest growing end-to-end mobile-commerce service in India

⁴⁴ Other similar places include FutureBazaar

⁴⁵ At the time of writing, it is not clear whether products and/or services offered by third-party sellers are order via direct links to a seller's website or not.

	Cell Bazaar ⁴⁰	Craigslist ⁴¹	Amazon Marketplace	eBay	Clickbd.com ⁴²	bracNet	ngpay ^{43, 44}	SNX India	e-Choupal
Reach⁴⁶ (Percent of global Internet users: three-month average)	0.0065%	1.811%	2.009% ⁴⁷	2.063%	0.0047%	0.00053% ⁴⁸	0.00203%	0.000007%	Not applicable
Daily page views per user (three month average)⁴⁹	19.2	20.92	6.35	14.64	14.2	3.2 ⁵⁰	2.64	1	Not applicable
Other traffic information (as reported by own website)		No. of page views a month: 20 billion No. of users a month: 50 No. of new classified ads a month: 40 No. of job listings a month: 1 million		No. of active users (worldwide; Quarter 1, 2009): 88 million total value of sold items on eBay's trading platforms in 2007 : nearly \$60 billion in 2007 ⁵¹ ;			over 200,000 registered users		
Languages offered (may not be comprehensive)	English	English, French, German, Italian, Portuguese, and	English, French, German, French,	English, German, Dutch, French, Italian, Japanese, Polish, Korean, Spanish, Swedish, Turkish,	English	English	English	English	Local (multiple Indian languages)

⁴⁶ Website statistics from www.Alexa.com

⁴⁷ Refers to www.Amazon.com US site (and not only Amazon Marketplace)

⁴⁸ Refers to entire site, of which the classified section is only one part of it

⁴⁹ Website statistics from www.Alexa.com

⁵⁰ Refers to entire site, of which the classified section is only one part of it

⁵¹ See <http://files.shareholder.com/downloads/EBAYPRESS/632302102x0x223370/C99E1580-C708-46FA-A1B5-3FB94A64ABB2/eBayMarketplacesFastFacts.pdf>, <http://files.shareholder.com/downloads/EBAYPRESS/632302102x0x223370/C99E1580-C708-46FA-A1B5-3FB94A64ABB2/eBayMarketplacesFastFacts.pdf>; and http://news.eBay.com/fastfacts_paypal.cfm

	Cell Bazaar ⁴⁰	Craigslist ⁴¹	Amazon Marketplace	eBay	Clickbd.com ⁴²	bracNet	ngpay ^{43, 44}	SNX India	e-Choupal
		Spanish	Japanese	Vietnamese					
Some Types of product/services offered	New/ used items; services; wholesale/retail agri-produce	Jobs, housing, goods, services, local activities, advice	Books, electronics, apparel, furniture, food, toys (new and used)	Clothing, shoes, accessories, consumer electronics, home & garden	New/ used items; services; Electronics, Cameras, Phones, Computers, CDs, Mobiles, Fashion Accessories, Music, and Travel.	New/ used items; services;	Travel, entertainment, banking, bill payment, shopping, food, charity	Fruits & vegetable	Wheat, vegetables, shrimp
Services offered	Search, posting	Search, posting	Search, posting, payment, order, delivery ⁵² , dispute resolution services ⁵³ , buyer/seller reputation statements	Search, posting, order, payment, dispute resolution services ⁵⁴ , buyer/seller reputation statements	Search, posting, order, dispute resolution services, buyer/seller reputation statements	Search, posting, buyer/seller reputation statements	Search, order, payment ⁵⁵ , delivery,	Search, posting, order, payment ⁵⁶ , delivery, quality inspection services	Search, order,
Choice of Payment/delivery options offered	N/A	N/A	ACH ⁵⁷ -enabled bank checking account, Credit	Third-party Merchant accounts (PayPal/ Moneybookers/	N/A		Credit cards, HDFC Bank account, ItzCash	Bank transfers (funds sent through clearing	N/A

⁵² Applicable where seller stores item at an Amazon Fulfillment Center

⁵³ See <http://www.amazon.com/gp/help/customer/display.html?nodeId=537868>

⁵⁴ See <http://resolutioncenter.eBay.com/>

⁵⁵ Has financial grade security; users required to enter 6-digit PIN; ngPay provides 128-bit end-to-end financial grade security from the user's handset through to the application servers. It uses an innovative approach based on the concept of application layer security and has been independently certified for financial transactions by leading security firms and financial institutions.

⁵⁶ Buyer's funds only released once commodities are physically received

⁵⁷ Automated Clearing House

	Cell Bazaar ⁴⁰	Craigslist ⁴¹	Amazon Marketplace	eBay	Clickbd.com ⁴²	bracNet	ngpay ^{43, 44}	SNX India	e-Choupal
(options through which marketplace facilitates deliveries)			cards, Amazon gift cards	Paymate/ProPay/Escrow); cheques,, money orders & bank wire transfer can be offered for select purchases			Cards, ngpay Wallet ⁵⁸	banks of SNX to delivery center); banking credit available	
Types of electronic platforms offered	SMS, WAP, GPRS, voice (IVR)	Web, GPRS	Web & select mobile web (GPRS) ⁵⁹	Web, GPRS	Web	Web	GPRS	Web	Web
Access device	PC/laptop, Mobile	PC/laptop , Mobile	PC/laptop , Mobile	PC/laptop , Mobile	PC/laptop	PC/laptop	Mobile	PC/laptop	PC/laptop
Cost of using service (excluding standard mobile/internet service provider charges; may not be comprehensive)		Posting charges - free except for select ads (Job posts, brokered apartment rental, etc.)	Monthly subscription charges (Only applicable to large-scale sellers) ⁶⁰ , seller/referral fees (applicable when item sold); fulfillment fees (storage, order handling, pick & pack weight-handling,	Listing/posting fees; Seller fees (on items sold)	enhancement services available (featured listing fees)			Member deposits ⁶² ,	

⁵⁸ ngpay's Mobile Wallet is a tamper-proof digital wallet that stores Bank account/Credit card details in an encrypted form on a mobile phone . An ngpay PIN is needed to access ngpay or payment/banking transactions

⁵⁹ Accessible via iPhone and iPod Touch

	Cell Bazaar ⁴⁰	Craigslist ⁴¹	Amazon Marketplace	eBay	Clickbd.com ⁴²	bracNet	ngpay ^{43, 44}	SNX India	e-Choupal
			shipping fees) ⁵¹ , special product Ad fees						
e-commerce classification (B2B⁶³, B2C⁶⁴, C2C⁶⁵)	B2C, C2C	B2C, C2C	B2C, C2C	B2C?, C2C	B2C, C2C	B2C, C2C	B2C	B2B	B2B

⁶² At the time of writing, it is not clear whether membership fees are imposed or not

⁶¹ Applicable if seller stores item at an Amazon Fulfillment Center

⁶³ Refers to an e-commerce transactions taking place between businesses

⁶⁴ Refers to an e-commerce transaction taking place between a business and a consumer

⁶⁵ Refers to an e-commerce transaction taking place between consumers

Annex 2 CellBazaar post categorieswww.cellbazaar.com, 17 April 2009

	Total	New	Used	Whole-sale	Retail
Mobiles	4,249	639	3,610		
Computer parts	1,716	445	1,271		
Cars	1,376	458	918		
TVs	1,099	840	259		
Motorcycles	1,082	636	446		
Repair (mobile, computer, electronics, electric, car)	1002				
Home furniture	829	564	265		
Bangala medium tutoring	815				
Rice	814			771	43
Computers	734	180	554		
Laptops	616	176	440		
Fridges	568	462	106		
Fish	567			535	32
Coaching (Computer, IELTS, etc)	539				
Cameras	491	131	360		
Photography	474				
English medium tutoring	458				
Electric items (IPS, UPS, generator, stabilizer, oven, fan)	454	355	99		
Books	391	324	67		
Land (to buy)	355				
Apartments (to buy)	308				
Dal	306			306	
Fruit	305			245	60
Garments	286				
Potatos	278			278	
Vegetables	271			271	
Event services (catering, decorating)	270				
Electronics (watch, sound system, photocopier, cassette player, PABX, VCD player, CD player, projector, fax machine)	269	91	178		
Poultry	269			269	
Videoining services	259				
Seeds	253			253	
Full time jobs	248				
Rental (automobile, venue, sound system)	238				
ACs	223	177	46		
Handicrafts	223				
Onions	199			199	
Musical instruments	196	49	147		
Bus hire	193				

	Total	New	Used	Whole-sale	Retail
Feed	191			191	
DVD players	175	123	52		
MP3 players	152	49	103		
Microwaves	151	129	22		
Office furniture	145	110	35		
Flats (for rent)	116				
Part time jobs	114				
Chillie	108			108	
Washing machines	96	63	33		
Shrimp	70			59	11
Renupona	64			64	
Cows	62				62
Music classes	57				
Machinery	54				
Offices (for rent)	48				
Language classes	46				
Deshi Chicken	38			38	
Pet birds	29				
Shops (to buy)	27				
Goats	26				26
Houses (for rent)	25				
Mushrooms	25			25	
Pet fish	24				
Corn	19			19	
Shops (for rent)	15				
Pet dogs	11				
Offices (to buy)	10				
Buffalo	8				8
Camel	5				5
Pet cats	4				
Pet rabbits	4				