Socioeconomic dynamics of multiple mobile phone (M²P) usage and communication in Ota, Nigeria

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Abstract: Multiple mobile phone (M^2P) usage has become an increasing practice in Nigeria but little is known about the factors propelling it or related communication processes. An examination of its operations reveals interaction with economic and social factors for reduction in call costs and management of network fluctuation, limitation and failure. While M^2P users are active and goal-oriented, usage behaviour is associated with socioeconomic variables, including electronic finance and marketing. Findings indicate that technological advancement has not created imbecility but consumers with the freewill of determining their communication needs and choices. The study is unique in examining this phenomenon and its implications for developing economies.

Keywords: multiple phone; communication; context; electronic finance; price discrimination; telecommunication; mobile technology; socioeconomic factors; Nigeria.

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1 Introduction

The uses of mobile phone and the gratifications derived have been studied by different researchers (Leung and Wei, 2000; Hans, 2004; Ishi, 2006). The phenomenon of multiple phone usage is however scarce in literature as little is known about its operations. As a rapidly growing segment of the industry, the expansion of wireless communication is affected by the gradual shift from fixed-wired to wireless lines, whose transmission technologies make communication compatible with spatial mobility. The significance of mobile phone is in its empowerment of people to engage in communication that is free from the constraints of time, physical proximity and spatial immobility. Accordingly, mobile telephony has been noted as offering better facilities over conventional telephones

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in terms of providing additional value like increased capacity, larger coverage area, reduced power usage and interference from other signals (Ndukwe, 2002). They are useful in meeting human needs for security, emergencies, business and interaction. Although cell phones were originally tools for rich and busy executives, they are widely used today by all categories of people around the world and have contributed to narrowing the telephone usage gap between developed and less developed countries as well as urban and rural centres. Mobile phones are potent in connecting less privileged populations to the sphere of digitalised information (Hans, 2004).

Traditional telephones were functional for household activities but more Americans are giving up their landlines for cell phones partly because the new devices are used in emergencies (Interlandi, 2007; Rainie and Keeter, 2006). This cannot be said of Nigeria where most people initiated phone communication with the mobile as fixed lines were not easily available and unaffordable due to monopoly by the Nigerian Telecommunication Company (NITEL). However, deregulation of the sector and the fall of traditional telephony in Nigeria ushered in Global System of Mobile Communications (GSM) in 2001, changing the face of information and communication technology. At inception, the Nigerian Communication, Econet Wireless Nigeria Limited (now Airtel), Communication Investment Limited (CIL) and the state owned NITEL at a determined fee. CIL had its license revoked because of its inability to meet the deadline for payment. The emergence of these operators broke down the monopoly of NITEL, making MTN the first GSM network and Globacom, the fourth GSM provider but first indigenous network (Ndukwe, 2003).

The introduction of cell phones to Nigeria was fully embraced as a long awaited communication technology. Although it was initially used by persons in the upper socioeconomic class, most citizens now use the device. The simplicity of the technology have facilitated use by literate and non-literate, rich and poor, skilled and unskilled, young and old, as well as rural and urban dwellers. One major impact of the cell phone stems from its capacity to include partly illiterate mass populations in less developed countries. The spread of rural telecommunications is further facilitated by the falling costs for mobile phones. The emergence of mobile telephony in Nigeria has become a blessing because no other technology has been as beneficial to the entire populace (Jidaw, 2009). It has brought new possibilities to the African continent (Aker and Mbiti, 2010).

The rate of mobile phone usage in Nigeria is alarming as GSM subscriber-base has continued to rise. Out of 222 countries that use cell phones in 2007, Nigeria occupied the 24th position with a total of 40,395,000 cell phones (CIA World Factbook, 2009). In about three years, the figure doubled to over 83 million active GSM lines as revealed in a recent estimate by NCC (Akpe, 2011). The rapid increase and overwhelming growth may be associated with consumer behaviour like increased subscription and multiple cell phone usage, new emerging mobile networks and promotional activities by telecommunication companies. While mobile telephony has become the most popular method of voice communication in Nigeria, the business is regarded as "one of the fastest growing GSM markets in the world" (Jidaw, 2009). Accordingly, more mobile operators like Etisalat, Visafone and Starcomms have launched into the market with keen competition of diverse services that appeal to mobile phone users because consumer satisfaction is paramount to usage and loyalty to new emerging technologies. This notion is supported by Lee and Jaafar (2011) who observe that customer satisfaction and

customer loyalty enhance word-of-mouth (WOM) referrals of internet banking. The present paper examines the dynamics of multiple mobile phone (M^2P) usage and communication as well as its interaction with social, economic and contextual factors. It emphasises users' motives for goal-oriented consumption decisions and their role in choosing and using communication media.

2 Methods

The study triangulated quantitative and qualitative research methods for in-depth examination of M²P phenomenon in Nigeria. It was conducted through the survey method and complemented with focus group discussions (FGDs), in-depth interviews (IDIs) and unobtrusive observation. Questionnaires were administered to 688 randomly selected males and females in Ota, Nigeria. The survey instrument generated data that showed the distribution and measurement of variables like age, occupation, monthly income, type of phone usage and reasons for multiple phone use.

Qualitative data emerged from eight FGDs, 15 IDIs and observation of mobile phone usage practices of individuals in the study community. The methods provided rich insights into the study phenomenon, elaborating the processes and reasons for usage choices despite respondents' socioeconomic background. Unobtrusive observation focused on usage behaviour and examined human actions in relation to their expectations from network providers. Qualitative approach thus provided in-depth understanding that discovered the meanings attached to multiple cell phone usage behaviour while quantitative approach discovered the external factors that lead to certain types of human behaviour.

While quantitative data were analysed using the statistical package for the social sciences (SPSS), qualitative data were analysed through ethnographic summaries and content analysis, which involved critical and systematic procedures that synthesised narrative information to derive verbal rather than statistical conclusions on the nature of the phenomenon. The study is unique in its examination of the practice of M²P usage in a developing economy like Nigeria.

3 Results

The results presented below are based on analysis of survey data and description of views from discussants and interviewees. The sociodemographic distribution of respondents shows 52% females and 48% males aged between 15–20 years (17.4%), 21–25 years (25.4%) and 26 years and above (57.2%). About two thirds of respondents (64%) are workers like lecturers, librarians, accountants, drivers and cleaners while 36% are students. All respondent receive a monthly income that ranges between N5,000 to N10,000 (9.3%), N10,001 to N20,000 (16.7%), N20,001 to N40,000 (8.1%), N40,001 to N100,000 (24%) and above N100,000 (41.9%).

3.1 Dynamics of M^2P usage

The use of multiple cell phones in Nigeria is high as revealed from quantitative and qualitative analysis. While Table 1 shows a 100% mobile phone usage rate, more than

two thirds of respondents own and use multiple phones, a contradictory expectation from people in a developing economy. The subscription behaviour of consumers to diverse telecommunication networks increases their mobile phone acquisition, leading to multiple phone usage. Accordingly, majority of survey respondents use multiple (74%) rather than single (26%) phones for communication and business connectivity.

Table 1Type of mobile phone usage

Туре	Frequency	Percent
Single	176	26.3
Multiple	492	73.7
Total	668	100

The same practice was revealed by interviewees who indicated use of between two and five cell phones. According to them, perceived benefits to be derived from multiple phone usage contribute to their mobile behaviour. It is instructive to note that some single phone users indicated possession of multiple Sims, dual Sims phones or anticipate new acquisitions to enable them derive similar benefits as multiple phone users. The difference lies in their possession of single rather than multiple phones but the final expectation from use remains the same.

3.2 Factors influencing M^2P usage

Different factors affect the subscription behaviour of mobile phone users. Network access and cost implications were identified the major reasons for M²Ps usage but call cost was the principal factor propelling the practice. Majority of survey respondents (51.2%) are attracted to multiple phone usage because of the low tariffs offered by competing telecom providers (Table 2). These users benefit from on-network price discrimination, free airtime, free internet access and diverse bonuses. Economic incentives derived thus play a major role in the use of multiple phones. Recurrent network failure (25.2%) further exposes individuals to M²P usage. In other words, inconsistent network connectivity and fluctuation encourages acquisition of alternative telecom networks by users to overcome technology-related communication barriers.

Table 2	Factors	influencing	multiple c	ell phone usage
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Factors	Frequency	Percentage
Possession of extra SIM card	100	20.3
Camera	4	0.81
Network failure	124	25.2
Cost reduction/low tariff	252	51.2
Others (e-mail, features)	12	2.4
Total	492	100

While low tariff is identified the main reason for multiple cell phone usage, the least contributory factors are phone features, including camera and e-mail facilities. Possession of extra Sims (20%) is sometimes personally acquired or gift from family, friends and telecommunication providers. The latter is common among newer networks in the market that utilise this medium as a promotion strategy for network visibility and patronage. This

promotion launches the network into the market, swings users from one network to another, attracts more customers and brings about sales volume and organisational profiteering.

The use of multiple phones has thus been found to be on the increase among Nigerian mobile users. Usage interacts with social, economic, environmental and personal factors as users actively seek what is most beneficial. M²P consumers are not coerced into new acquisitions but rather think, make decisions and act upon what is perceived economically and socially profitable in the actualisation of their communication needs. Hence, despite the motifs of network providers, consumers make the final decisions based to their communication choices.

Discussants further provided in-depth explanations surrounding M^2Ps usage, noting that consumers want reliability, simplicity, value for money and ease of technology use. The craving for communication satisfaction propels multiple phone usage. Analysis of qualitative data prominently highlighted network challenges, social factors and economic benefits as determinants of multiple cell phone usage as elaborated below.

3.3 Network challenges

Consistent availability of telecommunication connectivity is an attraction for timely transfer of information and social interaction. Provision of this by mobile networks is however uncertain in Nigerian, exposing consumers to higher levels of communication barriers through frequent message truncation and network failure. Focus group discussants observe that the use of a single mobile network for communication may frustrate a user who has urgent need of disseminating or receiving information at a time of network challenges. The advantage of subscribing to alternative and supporting mobile networks is crucial for overcoming such network-related communication barriers. According to discussants, reliance on multiple rather than single phone networks helps in bridging the communication gaps created by network fluctuation and failure. Multiple phones are thus useful for complementary purposes because "some networks disappoint so badly that one looks out for alternatives".

3.4 Differential coverage

People tend to acquire telecommunication networks that have wide area coverage or operational in their immediate environments but some networks are geographically limited, restricting connectivity. The use of multiple phones enables communication access to family, friends and acquaintances whose reach would have been challenged by virtue of network coverage. In order words, if a network is limited in coverage, people acquire alternatives to meet their need for connectivity with people in these disadvantaged locations. Businessmen, professionals and highly mobile persons use complementary networks to enable transaction with clients across varying geographical areas. M²P promotes reach to persons in diverse locations including the remotest parts of the country that ordinarily would have posed accessibility complications. That is why location-sensitive mobile channel would attract nearby incumbent consumers (Wei, 2011).

3.5 Social relations

The phenomenon of multiple cell phone usage occurs because people allocate different telecommunication networks to specific individuals, groups and purposes. For instance, while some phones are exclusively designated to special people like family, friends, business associates and dignitaries; others are basically assigned for general use. Phone lines are so designed in function and availability, limiting people's access to the private relative to the public ones. This bifurcation into public and private phones encourages multiple cell phone usage as different individuals direct their calls to specific lines.

In addition, the introduction of attractive packages by telecommunication network providers promotes cheap information flow and relationship building. These packages create avenues through which phone numbers of families and friends are registered and called at very low rates. With Etisalat's 'you and me' and MTN's 'family and friends', people could speak at length with registered members at ridiculously low prices relative to those outside this call plan. Accordingly, people subscribe to networks that enable them benefit from such promos, leading to multiple phone acquisition. This increases relationship building through regular interaction and bridges the social gap among people separated by physical space.

The recent plan that has attracted many to extra phone ownership, especially among youth, is the introduction of free internet access by some networks like Etisalat. This provision has made people, who initially used a single phone, subscribe to the network for free internet browsing. Furthermore, individuals with phones that have no internet facilities acquire new ones to enable them benefit from this free internet plan, which encourages social networking like Facebook, Twitter, among others, at no cost or need of a personal modem, computer or internet subscription fee.

3.6 Unhindered communication

Multiple phone ownership promotes unhindered communication. One could easily switch phones when there is abrupt interruption in communication due to network failure or exhaustion of call credit during conversation. Availability of a complementary phone enables continuation of discussion as the sender could readily switch to another phone to overcome the challenge. M²Ps thus afford users the opportunity of concluding a discussion irrespective of communication or situational barriers.

3.7 Economic benefits

Reduced tariff for on-network calls and network-based price discrimination contribute to multiple cell phone usage. This strategy is common and plays down competition in Nigeria. Although there was popular assumption that M²P usage would increase expenditure, users' experiences are contrary as there is instead lowered expenditure when calls are directed at people with similar networks. Price discrimination is therefore more of price off-net calls than on-net calls. Berger (2002) explains why operators may want to set off-net retail prices higher than on-net prices. According to him, when consumers care about receiving calls, firms will want to make it expensive for call to a rival network so as to lower the demand for subscription to the rival network. By so doing, they benefit from making their rivals less attractive to subscribers.

Some networks also offer lower call tariffs for international calls, attracting people with international affiliations to subscribe to such networks. This promotes multiple cell phone usage as individuals acquire additional mobiles. Visa phone was famous for this, causing people to subscribe to the network despite its limitation for national coverage. Airtel prices for international calls today are attractive as costs for both local and international calls are the same. Other economically beneficial packages abound, with implications for multiple phone usage as enumerated below.

3.7.1 Free night calls

This package was initiated by MTN to attract young people to the network through its offer of free night calls. Its benefit to the network provider in terms of increased subscription led to the imitation of other networks like Airtel and GLO to offer the same service to the public in order to prevent their customers from migrating to other telecommunication networks. Based on time differentials in operation among providers and the terms of usage, free night call attracted user from other networks, hence, subscription and acquisition of extra phones.

Free night call is bait for youth who frequently utilise this facility for lengthy and unpaid for communication with family, friends and associates. Because participation is limited to users within the same network, people acquire alternative phone to enable them benefit from this free resource. The utilisation of free night calls is not limited to young people but spouses and others in relationships who engage in prolonged interaction.

3.7.2 Free text messaging

This is a process by which network providers offer their clients the opportunity of sending free text messages. The number of short message services (SMSs) allotted to a subscriber depends on the network and operational package of the user. This service was initiated by GLO and Airtel, who respectively gave 25 and 15 monthly free SMSs to their subscribers. It facilitated multiple cell phone usage as consumers were easily attracted to networks that provided free communication incentives. Hence, individuals that originally were not subscribed to such networks resorted to additional phone acquisition as a means of benefiting from this free offer which is not limited to any time of the day.

3.7.3 Reduced SMS price

Until recently, MTN did not provide free text messaging for its customers but a reduction in cost for SMS for on-net messaging. Hence, MTN to MTN text messaging is cheaper (\clubsuit 5) than those sent to alternative networks (\clubsuit 15). The huge difference in cost encourages other network users to acquire MTN lines to enable them benefit from cheap text messaging for national and international SMS (\clubsuit 5). Airtel, on the other hand, has a flat rate for sending text messages to all national (\clubsuit 9) and international (\clubsuit 15) networks. Depending on consumer needs, additional mobile phone networks are acquired to satisfy particular and peculiar communication and economic needs of users.

3.7.4 Reduced call cost

On-net price discrimination is another strategy utilised by phone users for cost efficiency. This promotes multiple phone usage as individuals subscribe to different mobile network providers to benefit from on-net call prices, which are lower than off-net prices. Even within each network, different packages attract different call prices and to benefit means subscription to those particular phone lines. For example, an MTN user operating the 'family and friend' package will pay about ¥10 per minute when the call is directed at an MTN 'family and friend' but if the same call is directed at someone in a different network, it costs about ¥30. The difference allows the subscriber to save about ¥20 for each minute call made to somebody with an MTN line. Accordingly, most multiple cell phone users subscribe to multiple networks to enable them benefit from on-net price discrimination. An interviewee noted:

You only pay in the first instance to acquire a phone but after that, you enjoy very low call tariffs which can never be compared to using a single phone. I have four phones so that I use each to call the same network of the person I intend to speak with. I have been enjoying this service because I talk more at less cost. In fact, I use these phones for cost effectiveness and to overcome network problems.

Due to the state of competition in the telecommunication business in Nigeria, more networks are bringing down call prices, swinging users away from their original networks providers. This competitive nature has contributed to the increase of multiple phone usage because most consumers prefer networks with the cheapest call tariffs and tend to utilise such as soon as network providers lower their call costs. As reported by an interviewee,

I started out with MTN but when I found out that Airtel was the cheapest network, I bought their Sim and since then, my investment in mobile communication has drastically dropped. For instance, instead of spending about N1,500 weekly to make calls using MTN, I now spend about N600 for the same calls. Why should I be using MTN when Airtel enables me save much money irrespective of the network I am calling? In fact, having this new phone is good for me because I am permitted to call any network and even international calls at the same rate. I am enjoying my new phone network. I only use my MTN during emergencies, when I am calling a 'family and friend', sending SMS or when they have promotions.

3.7.5 Promotional packages

The desire by some phone users to win promotional offers encourages M^2P usage. Promotional packages include cash prices, sponsored international trips, cars, free airtime, material gifts like television, deep freezers, among others. Some consumers are enticed by these promotions, leading to acquisition of additional phone lines to enable their participation and chances of winning. The millionaire promo by Etisalat attracted a lot of subscribers to the new network, which promised to make millionaires from those who recharge with only 200 naira (N200). With this in view, a lot of people migrated to this network, resulting to mobile phone multiplication.

The promotional packages of Etisalat are diverse and appeal to numerous phone users. Presently, they give 30% bonus for any recharges made, six free daily SMS to Etisalat numbers, ten free MMS to all Etisalat lines, megabits data for free internet

browsing, among others. Its multiple promotions have contributed to its high level of patronage as well as M²P usage. Although the network is the newest operator in Nigeria, an assessment of GSM operators revealed Etisalat as the fastest growing GSM provider in Nigeria (Akpe, 2011). Interviewees concluded that subscription to most networks is based on envisaged economic and social benefits to be derived.

Today, manufacturers are increasingly adopting diverse channels to increase financial performance and improve services. Mobile phone communication packages are carefully devised plans of action to achieve organisational goals. They are designed with the intention of beating the market competition. Although the entirety of packages meets the social and economic gratification of subscribers, the underlying goal of network providers is to sell and maximise profit. Packages are therefore embedded into marketing strategies that create value for customers while providers capture value from customers.

4 Contextual analysis of mobile phone usage

The use of cell phones is contextually sensitive. Although applications of information technology are often similar, specific social and cultural impact varies because technologies are influenced by cultural traditions, power structures and economic resources. Social, economic, political and cultural environments determine phone usage and it is increasingly taking a major role in communication revolution in Africa. In Nigeria, mobile phones are basically used to satisfy people's economic, social and communication needs until recently that they are used for political campaign and social mobilisation. New media bring social changes at distinct levels of social structures and are currently advancing from personal to marketing communication, individual identity to political mobilisation, consumer choices to global corporations, and virtual spaces to lived realities and embodied geographies.

The disparities in phone usage are based on differential positioning. While Nigerians are secondarily attracted to the additional mobile phone features, Americans are neither compelled to access the web from their phones nor rely mainly on cell phones for communication because they are ultra-connected with web services and can find data on the web through their computers (Fawkes, 2007). Such developed countries are ignoring most services offered by phone companies, who have dazzled people in the past with games, text messaging and camera features. Music players and internet access are also featured to capture potential users.

In other words, such additional features do not appeal to US subscribers but Africans, South Americans and Asians, the 'Region 3' places where mobile phones existed before the internet (Fawkes, 2007). Through his theory on mobile phones and their use, Fawkes explained that the timing of adoption of the internet and mobile phone affects people's relationship with the phone. The application of this theory in the Nigerian context is limited as only a few users were attracted by the phone features. Most Nigerians instead use the device for ease of interpersonal communication mostly with family and friends. Hence, the world is more complex than Fawkes' 'three region theory' for mobile phone usage.

The context of communication plays a major role in the gratifications derived by people from different sociocultural environments. Using mobile phones have become a lifestyle in Nigeria because they enable fast communication and overcome barriers of time, space and situation. Today, people could use their mobiles to browse the internet, upload and listen to music, communicate with family and friends as well as store and retrieve information, which was impossible with traditional oral culture. Unlike the initial perception of cell phone as tools of the wealthy and priced beyond the reach of the ordinary citizen, multiple cell phone are used by all strata of people in Ota – rich and poor, literate and less literate, young and old, skilled and unskilled, professionals and non-professionals, urbanites and ruralites, among others. The use of multiple cellular phones have become a wide spread phenomenon across the country.

5 Discussion

Recent trends in e-finance have shown that mobile technology is growing. This is not limited to the developed nations as evidence shows its application and relevance to developing nations, including Nigeria. Associated with growth are new opportunities for deploying new services for consumers of technological services but the final decision to utilise a product is related to the selectivity processes of perception, exposure, attention and retention. In other words, the attention consumers pay to mobile advertisement and promotion partly influences their decisions for multiple phones usage and services. Beneke (2011) thus concludes the existence of a partially mediated relationship by the attention a consumer pays to mobile advertisement and their involvement in it.

People around the world are starting to use two or more mobile phone numbers on a regular basis for a variety of reasons. M²Ps are used within social, economic, cultural and marketing environments. Although marketing mix strategies are gainfully employed by telecommunication providers for consumer purchase, adoption and usage of mobile phone services, the dynamics of additional external and internal variables influence M²P usage. To this extent, Nigeria is identified one of the fastest growing telecom markets in the world. Findings from the study community show that economic and social factors have made the phenomenon inevitable as they reduce communication expenditure and facilitate uninterruptible discourse, satisfying users' multiple needs for cost effectiveness, unhindered communication access and social interaction.

The reduction in communication costs associated with mobile phones has tangible economic benefits of improving agricultural and labour market efficiency as well producer and consumer welfare (Aker, 2010; Klonner and Nolen, 2008). Many mobile network operators offer cheaper rates for inter-network calls, especially in markets where competition among network operators is high. Highly cost-conscious consumers naturally get multiple numbers for cheaper calls. Mobile phones in Africa are evolving from simple communication tools into service delivery platforms and could transform lives through innovative applications and services (Aker, 2010).

Technology was assumed an objective, external force that had deterministic impacts on organisational properties but its significance is based on the way people use it (Baran, 2002). In other words, technology is determined by the kind of power given to it by people, who use media in ways that suit their intentions and preferences. Multiple cell phones provide instant feedback, transmit multiple cues such as voice tone and inflection; and use natural language. It focuses on human aspect of technology, strategic choice and social action.

People make rational choices that match a particular communication medium to a specific task (Daft and Lengel, 1984; Buchel, 2000). Mobile phones are not simply technological devices but social and cultural phenomena. People and technology have a

reciprocal relationship because phone users shape the technology which fulfils their needs. Their relationship is a spiral and technology operates within a complex social field (Murphie and Potts, 2003). The effectiveness of its service to the public depends on how it satisfies people's needs (Leung and Wei, 2000). Cost implications and social considerations have made mobile technology desirable, meaningful and relevance to human creation. Improved communications among members of a social network can also affect social learning, which can in turn influence the rate of technology adoption (Conley and Udry, 2010). The impact of mobile phone usage is thus dependent on various variables, which either attracts or repels product consumption.

Multiple cell phone usage in Nigeria is therefore people-oriented. Users possess the ability and capacity to choose or suspend its services at any point desired needs is unmet. Multiple phone usage in Ota is therefore not based on global trends but socioeconomically and culturally determined. The behaviour of users to switch to competing mobile networks or accumulate cell phones is related of external and internal factors. Change in communication processing and actions are a function of human reasoning, motif and adaptation; hence, the freewill of consumers to make decisions on media uses and effect. According to Sakkthivel (2011), the erosion in product attributes, pricing problems, dealer and service problems, eroding brand reputation, among other, have significant impact on consumer switching behaviour. For him, the entire marketing mix variables and external variables have significant impact on consumer buying behaviour in a matured marketing environment. Hence, basic needs, social situation and individual background affect users' ideas about their want from media and the media that best meet these needs. Multiple cell phones are therefore utilised for information, integration, social interaction, entertainment as well as other socioeconomic expectations.

6 Conclusions

The paper examines socioeconomic dynamics of multiple cell phone usage in Ota, Nigeria. Its adoption is related to network fluctuation, failure and cost efficiency. The paper provides insights into the interaction between new communication technologies and society. The flexibility of multiple cell phones for conversation, SMS, music, internet, among others, has made the technology useful and desirable. People use multiple cell phones for maximising profit and building social relationships.

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