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Rural India Calling

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Abstract

This paper talks about an interesting and intriguing user group - of mobile phone users in rural India - never before have their opinions been so valuable and experiences, so important. Rural India as a market and mobile phones as a technology is a potent combination. Mobile phone companies and telecom operators are going all out to understand this fast emerging market, in order to monetize this growth.

The findings presented in this paper are based on extensive fieldwork done across villages in India with the objective to understand the attitudes and perceptions of rural Indians around mobile phones. This paper delves into their lives and offers insights which aid in attaining the larger goal of design for all by exploring the services and technology that would benefit the rural Indian mobile phone user.

With rural India's accelerated adoption of the mobile phone technology, it becomes imperative that we understand them, their lives and needs better. They have proven to be very open and accepting of the mobile telephony wave. So, now the question is - Rural India is ready, are we ready for them?

1. Why go the rural way?

70 per cent of India's and 12 per cent of global population lives in rural India and contributes 50 per cent of the country's GDP. Their population of 75 crore (750 million) is more than that of US, UK, France, Japan, Italy and Germany put together. Government of India statistics reveals that even with the increasing urbanization and migration, 63% of India's population would still be living in rural areas in 2025. [1] Thus rural market has been, is, and will continue to be vitally important to the Indian economy.

While overall communications market growth will be led by urban areas, rural appending growth of 9.5% over next 20 years is still noticeable. [1] Also, it is estimated that communications will be the fastest growing sub-category of rural consumption as millions of households rise out of poverty and enter the ranks of 'rural aspirers'.

Although, we need to understand that Rural India is not homogenous and in fact there is no one rural India. An old saying captures the variations in rural India perfectly - *"Kos-kos par badle paani, chaar kos pe baani";* which translates to – at every mile taste of water changes and every four miles dialect (*baani*). Even within one state, the rural areas have demonstrated stark differences by virtue of their economy and exposure. Such diversity poses a great challenge to those who intend to serve this "Rural Market". Surely, here one size would not fit all.

2. Mobile phones in rural India

Most of Rural India skipped the landline telecommunication and internet age and leapt straight to adopt mobile telephony. With mobile phones becoming cheaper, easier to procure and affordable network charges, an increasing number of rural audience adopted the technology. The last two years have seen an accelerated adoption to mobile technology. Now majority of village families own at least one mobile phone. It is their first exposure to western technology, and step ahead from their experience and usage of simpler interactions and single button interfaces of television, calculator and radio. The most popular brand in rural areas was found to be the Nokia 1100

model as it is strong, easy to use, people recommend it and provides value for money.
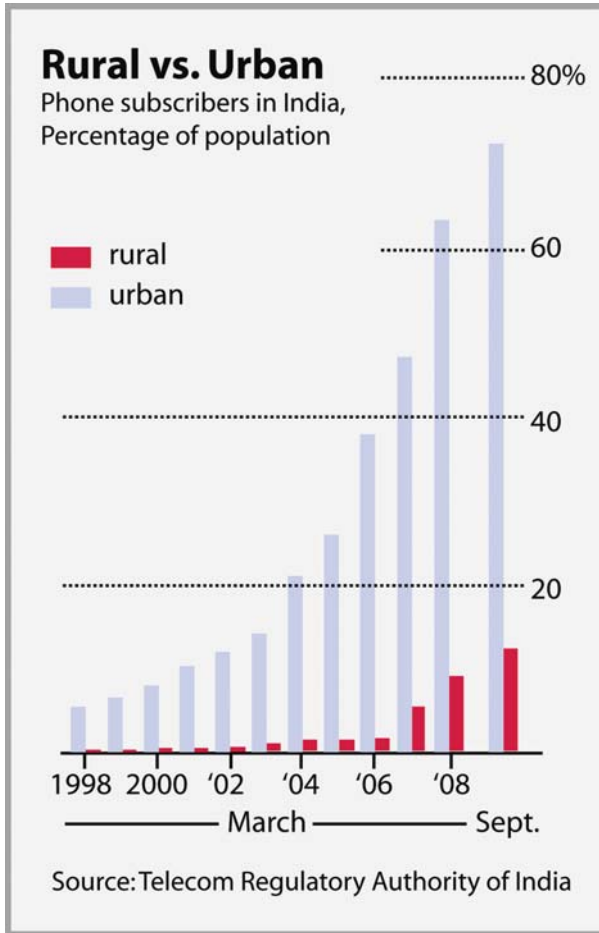

Figure 1: Rural vs. Urban phone subscribers in India

On an average rural Indians use their phones around 8.5 hours a month, up 10% over the past year. Of the next 250 million Indian wireless users, approximately 100 million (40 per cent) are likely to be from rural areas, and by 2012, rural users will account for over 60 per cent of the total telecom subscriber base, according to a report jointly released by Confederation of Indian Industries (CII) and Ernst & Young. As per The Telecommunications Regulatory Authority of India figures, subscriber additions in rural areas exceeded additions in the metros. [2]

3. Mental models around mobile phones

This paper is based on research studies conducted across India to understand the impact of mobile phones in the lives of rural Indians and the unmet areas of information that could be fulfilled using mobile devices.

A combination of qualitative research; rooted in ethnography and quantitative research to validate some of the findings have been used. An eclectic team of research experts and specialists from the field of social sciences, market research and rural research formed the core team. These insights are crucial in understanding the rural mobile phone user and thus aid us in serving them better.

3.1. Owning a mobile phone

Mobile Phone ownership is largely limited to the earning male or head of the household. The primary reason is that women are unable to produce the proof of identity required to get a connection. Mobile Phone is a device which gives its owner a status, power and freedom to communicate and that too, very easily. The undercurrents strongly suggest that the rural society may not be ready to impart similar rights to the women of rural India yet and this could be impacting the gender skew in ownership of mobile phones.

With an average household income of Rs. 4000/- per month, a rural Indian perceives mobile phone as an investment, and not an indulgence. This is an interesting insight which debunks the common perception wherein a mobile phone implies additional expense and thus becomes avoidable. Mobile Phone is fast catching on with a bicycle, radio, alarm clock to be the first durable that a rural Indian is purchasing.

The mobile phone seems to have greatly improved quality of living, simply because almost everyone now is contactable and there is no longer an information delay of any sort, be it critical in nature or simply that of enquiring about well-being of loved ones. Knowing the whereabouts of family members and getting in touch with distant relatives is the primary use of mobile phones in rural India.

The mobile phone is also seen as something with a lot of possibilities, much more than what is present; which is largely that of making calls.

A person with a mobile phone is perceived to be 'efficient' and one who values time. A person who gets a mobile phone is also eager to be perceived as one, and hence is eager to disseminate his new number.

For most rural Indians, mobile phone makes economic sense. A villager is able to save time and money to travel to another village to meet his grandchildren, and is able to catch up with them for less than Rs. 1 per minute. Mobile phone is also making business sense to farmers who can now find the best price for their produce by calling the wholesalers and checking with other farmers.

3.2. The sociology of mobile communication

During a research project in rural Gujarat, a group of young men were asked, "So, how has mobile phone changed life in today's world?"
A young man promptly smilingly replied —"*Jab se mobile phone aaya hai, tabse sab log jhooth zyaada bolne lage hain.*" ("Ever since mobile phones have come, people have started lying much more."). This simple yet profound statement has stirred the whole aspect of sociology of communication. During the landline days, we used start by asking "How are you?" to the other person; today, with mobile phones we start with "Where are you?"

Mobile Phones have made our lives easier and facilitated communication but also have impacted the nature of our relationships and the dynamics of communication. Rural audience is relatively more sensitive to the sociological impact of the mobile phones.

3.3. The all mighty retailer

Rural audience has their trust grounded in the wise known person. For generations, they have relied on the village elder or opinion leader to seek advice and opinion on their day-to-day life and issues related to it. For mobile phone users, this expert is the local mobile phone retailer.

Mobile phone retailers are major influencers in rural India. Users in rural India require a lot of handholding and the retailers not only are the purchase point for various products and services but also act as a guide to using them. The most common need of the users is to know as to how to save contacts on the mobile phone.

The local rural retail store serves as a one stop shop for all their mobile phone related needs. The retailer recommends the mobile handset, the service plan and even guides the novice users into turning on the handset and using its features.

There have been instances where information hoarding was observed around the usage of mobile phones. In rural India, information is important and renders power to the one who has it. The retailer is such an expert who has knowledge about mobile phones and is regarded with respect because of this. The rural users turn to the retailer in need and are much gratified for his services. The retailer was observed to not share the breadth and depth of his knowledge on mobile phones. [3] His main drive is to maintain this edge.

A typical retail shop sells recharge coupons, mobile phone handsets and even pirated CDs. Some even have items like batteries and confectionary. New users at times lock themselves out of the phone, and it is the retailer they turn to for help. The retailer is thus an effective channel to educate, influence and capture the rural audience.

4. Rural India realities

During the fieldwork across research studies in rural India, the experience has been enriching and educative simply because the ground reality has almost always been surprising. Rural India never ceases to amaze the stereotypical urban. Hence, the sociology of the rural Indian emerges as an important aspect to understand.

When asked how would they want a mobile phone designed for them to be like, a frowning farmer replied, "Why should it be different than yours? Perhaps, they do not wish to be excluded but included.

Such paradoxical yet powerful thought wave challenges the philosophy of designing for the rural Indians. The key is to be subtly powerful, in serving the need in an inclusive fashion. It is imperative to gather the ground level realities of the user group which one intends to serve through a unique and new technology

4.1. Information is power

In rural India, information is scarce, valuable and held with the privileged. The information source could be a *sarpanch*, who knows about the government schemes on kisan

loans; an *anganwadi* worker who knows about the free meal scheme or the village teacher who has information on scholarships for higher education. Caste, gender, money have been long known as the factors influencing the power dynamics in rural India. Information has emerged as one potent power symbol. Information bestows immense powers to the ones who have it. The information dissemination channels in rural India are not always fair and equal.

Mobile devices have a great potential to eliminate these inequalities that come from "those who know" deciding whom they will tell, say, about government health programs. Information is out there, the need is to provide it to the ones who need it. A mobile phone can act as a neutral distribution channel which empowers its owner with the option to seek information especially around livelihood, employment, education. They need information that can help them achieve a better standard of living. Our research identified the key information areas as unmet needs were agriculture, health and NEWS.

4.2. Rural does not mean farming!

For long, a rural Indian has been envisaged as one who is all about farming. Such a stereotype has led to a lack of entertainment services for the rural audience. Entertainment is a human need.

A leading TV channel recorded 25% of interactive TV responses from rural areas in Andhra Pradesh. Interactive media programs receive excellent response from non-urban locations.

In a study to understand the entertainment needs of rural Indians, we found that Cricket is the largest source of entertainment for them. Another source of entertainment that has besotted the rural audience is bollywood content.

So really how different the rural audience is from the urban one when it comes to their entertainment needs. While today, the largest provider of entertainment is the television in rural India, there is a huge opportunity to provide this on the mobile platform. With long power cuts, mobile phones should emerge as the new entertainment source for the rural Indian.

4.3. Rural does not mean poor!

While the term 'rural' conjures up an image of tiny, remote villages engaged only in agriculture, the reality is quite different. In 2008, the rural areas grew at a robust rate of 25 per cent as compared to 10 per cent growth in urban retail market. On account of negligible tax liability and little or no burden of loan repayments, the Indian rural population has a higher propensity to save. The rural areas account for 33 per cent India's total savings. [4]

In terms of economic output, rural India accounts for almost half (48%) of the country's economy. So as a target market, it is attractive not only because of the size, but also because of impressive growth potential. Also, Rural GDP has been witnessing strong growth in the last four years (average of 4 per cent). [5]
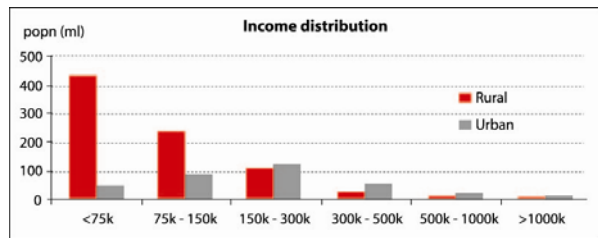
Figure 2: Rural v/s Urban: Income distribution

Thus, there is no reason for one to any longer go by the belief that rural means poor. The rural Indians have been found to be very sensitive towards value for money. They are constantly calculating and evaluating investment options with its returns. Though they have been found to be more comfortable with the sachet pricing model, wherein they pay a small amount at a time for a product or service. They certainly did not show inclination towards pricing models wherein they tend to get locked in for a longer period of time. Pay per use and smaller units are more acceptable and have proven successful in the rural context.

Rural Indians are in fact willing to pay a price for products such as music and movies that their urban counterparts may not, simply because they have lack of options to get it from. There is also a better sense of value for something that they have not had. Our research on willingness to pay for an unmet need showed that more rural Indians were willing to pay than have it for free. This clearly demonstrates that

they value information and would trust information that came at a cost.

4.4. The literacy barrier?

According to census of India 2001, the overall rural literacy rate is 58.7%. [6] This rate however does not reflect on an individual's effectiveness and efficiency in using a mobile phone. We now have mobile handsets which have been designed keeping in mind the rural user – sturdy, affordable, with features like torchlight and a single, dust free, bilingual keypad. Even with these adaptations, the rural mobile phone user still goes through a learning curve to perform tasks such as unlocking the handset, saving contacts in address book and deciphering the iconography of the various functions. Some of the iconography used in a mobile phone seems quite foreign; for instance; wrench for settings does not convey its function.

During a study we found that most users were not aware of the # (hash) key on their mobile phones. They simply did not know where it was and what it did. Some were confident that in fact there is no such key.

One clear literacy issue relates to SMS. Though the rural audience has been found comfortable forwarding existing messages; most promotional messages, in English, are never read.

The interesting aspect is that this supposed barrier has not deterred the rural Indians from adopting the mobile phones. They have in fact innovated some of their own ways to use the mobile phone effectively. For instance, we observed rural users saving a contact with an image from the default set provided in Nokia 1100.(Nokia 1100 is a simple, affordable and durable handset with a monochrome screen and is targeted at users who do not need advanced features beyond making calls and SMS text messages, alarm clock, reminders. It has torchlight and a single dust proof keypad.)They look for the image and press the green button to make a call. So clearly the rural mobile phone users have adapted well to use the technology to their benefit.

5. The way forward

There is enough data and supporting reports which establish rural India as a growing market. Mobile handset manufacturers and service providers need to adapt their strategy and distribution to meet this growing sector. Now having identified this potential market to be tapped, the need of the hour is to understand their needs and offer them relevant services and solutions using appropriate and effective technologies.

5.1. Value added services

There is a need to offer quality value added service to the rural users, which enhance their quality of life. With coverage expansion by operators reaching rural areas, mobile networks are penetrating geographies where there are few entertainment and information outlets other than television. In such areas mobile can be positioned to function as an all purpose device that provides entertainment, information and communications.

For instance, Qualcomm India, TATA Indicom, Astute and MSSRF have started a joint initiative called Fisher Friend, a mobile application which provides vital real-time information to fishing communities when and where they need it the most, at mid-sea. This includes when and where to sell the fish through access to market prices, weather (e.g. sea wave heights, satellite scan data about fish shoals), government schemes, etc. Access to this data could drastically improve market transparency and thus earning capabilities for smaller fishermen. [7]

Rural applications initiatives are likely to grow quickly in less developed geographies because of the willingness to spend on services which enhance livelihood.

5.2. Voice Recognition Technology

The next question is the medium of offering these services, the technology which would be best suited to offer the required service. Voice based interfaces have been identified for their potential to increase access to information services in a developing country like India where 480 million illiterate people reside. [8] Interactive Voice Response (IVR) is an automated telephony system that interacts with callers, gathers information & routes calls as per option selected by user, who has to follow IVR directions to get to the requisite information or content.

IVR will be a quick solution to providing regional content in local languages all across India. In rural areas where the literacy rate is

low, IVR will be in great demand because of ease of use and local language support. [7]

Voice as a technology has the ability to account for variations in the local language and this is a huge advantage. Users are comfortable with spoken word compared to written text. Voice services are key in the rural context.

Voice has been proven as an effective technology in rural banking transactions as well. Dena Bank has come up with *Kisan* ATMs at *Balwa* village near *Gandhinagar* that enables its rural consumers who cannot read or write to conduct their banking activities using voice guided animated screens without any hassles. Its key features include; Finger print verification; a feature close to their mental model of thumb prints as identification instead of a personal identification number.

Mobile voice based technology cuts through the issue of literacy and connectivity in rural India. These interfaces follow the most natural interaction of the user with the mobile phone – hear and speak. The services provided through a voice user interface also are not handset dependent, which is especially crucial in the rural context wherein ultra low cost handsets are more prevalent.

Voice interfaces do not present users with complex interactions. These are more natural, dialogue based conversation styled interactions. These interactions come closest to the basic use of mobile phone – to talk to another person. They have an easy learning curve and capability to offer regional language content. They are also capable of replicating virtually any information service offered on SMS or WAP, e.g. news, market rate information, etc.

Voice based user interfaces make content discovery faster and easier. In scenarios where there is a lot of information for a user to go through and make a choice; voice search and browsing could be an effective solution.

6. Mantras for creating an effective voice user interface for the rural audience

A voice user interface includes parameters such as overall presentation, Language and Scripting, Navigation, and Error Messages. The design of a VUI should ensure that its parameters are suitably modified for a rural user.

The voice persona should sound trustworthy and humble. The voice should not alienate the users with its accent or diction. Language used should be local, using colloquial phrases and regional dialects which create an immediate connect with the user. The language should be simple and clear, and should avoid jargon and tone that might make the user feel patronized. The script should include short dialogues with limited options giving a clear direction to the user. The error recovery should not make the user feel regretful but be effective in giving clear direction.

These subtle yet effective design guidelines; which are rooted in one's understanding of the rural audience can go a long way in creating an effective interface.

7. Conclusion

This paper describes the research insights gathered through field work in rural India, with the specific goal to understand mobile phone usage. The rich nature of the work brings forth interesting data in the form of mental models of the rural mobile phone users. The research findings have also busted some of the commonly held perceptions regarding rural India. These revelations supported with research data and market trends are crucial in creating a wholesome understanding of the user base. The mobile phone and its applications should be able to improve the quality of life of the rural mobile phone user, keeping in mind their context. With the knowledge of the scenarios, the way forward is providing relevant value added services using voice recognition technology. Of course the solution is not as simple. There are challenges of many kinds which need to be addressed to be able to meet the larger goal of design for all.

One of the challenges for a voice based interface is to serve the wide range of languages with variations in dialects and pronunciations. India is home to several hundred languages and over a thousand dialects. The 1991 census recognizes 24 languages and 1642 dialects. Design for all implies that technology should be able to serve this varied range.

The second big challenge in creating voice based interface for mobile phones is the voice recognition technology. A robust recognition system with an extensive vocabulary, which recognizes utterances with utmost accuracy, is crucial. Indian rural environments may not be the most conducive to using a voice recognition system. A rural environment is resplendent with background sounds, loud noises and multiple

interactions going on the mobile phone. A voice recognition system will have to be stable enough to not be thrown off by such inputs.

The other big challenge is the varied and diverse needs of the rural audience. Their information needs are also linked to geographies. For instance, information on crops is very region specific.

It would be a constant endeavor to meet the challenge. The task ahead is to work with the profile of the rural mobile phone user to create true value add, easy to use and affordable service solutions.

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