The Visceral and the Material: Social Dynamics and Tangibility Concerns Amongst New Indian Smartphone Users

ABSTRACT

India has seen impressive growth in the number of internet-enabled smartphones, principally amongst its low-literate rural and urban population. Social factors (peer pressure, friends' experiences and a need for 'belonging') are major determinants of smartphone acquisition and usage, coupled with increasing availability of affordable devices. Many among this new crop of users drive behavioral change in rest of the rural population, towards adoption of technology and influence usage patterns. It is at what we consider a tipping point in this hitherto unexplored area of smartphone technology penetration in this demographic, we conducted a contextual inquiry with a sample of 107 emerging users from Mumbai and Wai in India. With proliferation of social and sharing applications, we find a reinforcement of existing social dynamics in the way people use, regulate, and access smartphones. There is a parallel trend in adoption of utility apps compared to their traditional, tangible counterparts. We discuss the relevance of these two emerging patterns in determining design decisions for these markets, in the paper.

Author Keywords

Smartphones; Human Computer Interaction; Interaction Design; Low-literacy; Information and Communication Technology; User; Usage; Social Hierarchies

ACM Classification Keywords

H.5 m. Information interfaces and presentation (e.g., HCI): Miscellaneous; See http://acm.org/about/class/1998 for the full list of ACM classifiers. This section is required.

INTRODUCTION

The year 2015 is a tipping point in the field of internet usage and communication. A vast majority of rural and semi urban population is gaining access to the internet. The interesting part is that they are directly getting exposed to app based internet access instead of the conventional browser based one. Moreover, a lot of studies have been done regarding feature phone usage in India but the emerging trend of smartphones is yet to be researched upon. A study in app usage behaviour and acceptance patterns is relevant.

There is a visible shift to smartphones—despite the stagnant education levels—aided by the availability of affordable devices.* Educated people are observed to be the early consumers of technology. The IAMAI also suggests that the next big set of internet users hail from rural India; the current number of urban internet users is 119 million while the number of rural internet users is 40 million (Oct 2014). The rural population is steadily catching up with internet usage through smartphones. Only a couple of years ago, India had less than 5% smartphone penetration. This year, it is expected to be about 20%, with urban India having a higher share; this leaves us with a rural population that is on the threshold of technology adoption and a market set to make affordable devices available to them. This is a great time to get back into the field and understand emerging trends as more of the low-literate, rural population start accessing these technologies. We have observed that smartphone usage is deeply influenced by social factors and interface tediousness, and support this with our findings from 107 user-interviews from varied demographics across urban and rural locations.

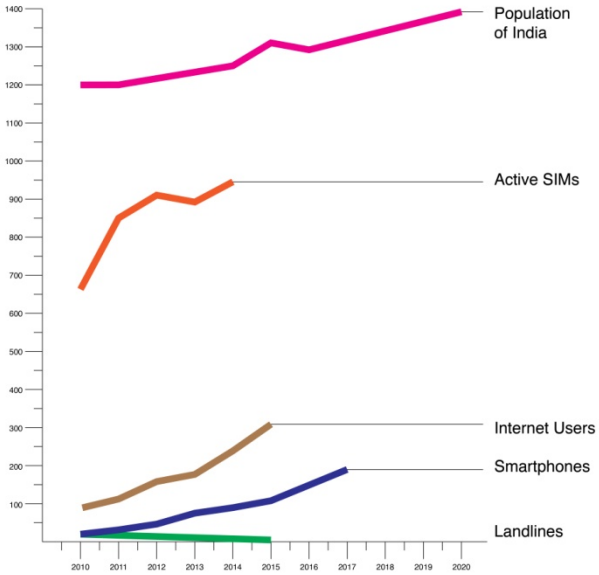

Figure 1. Comparative study of population in India w r.t active SIMS, internet users, smartphones and landlines

BACKGROUND

The social factors influencing smartphone & app usage and its impact on the society have been the topics of discussion in varied papers. The different barriers people have to overcome before they gain access to and competency in new technologies are: literacy, initiative, no peer users, aversion, lack of time etc [2]. Recency of visit to the local retailer and prior purchase behaviour are two major determinants of the brands and models the consumers buy [8]. In the Indian context, where retail shops in rural areas are not standardised, the purchase decisions rely heavily on

the above principle. Meanwhile, smartphone usage relies heavily on 'mediated use', that is, part of any related task or process is mediated via family members, friends, peers, kiosk operators, agents or other dedicated service providers. It is defined as an aspect of a service where the user is expected to complete a task without any assistance, but which for various reasons is partly or wholly carried out by a 'mediator' [8].

In India, studies have been conducted to understand the scope, magnitude and to learn from experiences of how mobiles are emerging as viable tools, devices and platforms to meet vital development and governance objectives including social and behaviour change (SBC). m-Governance provisions that the websites of all government departments and agencies be made mobile compliant. It is proposed to integrate at least 125 Government Departments with Mobile Services Delivery Gateway (MSDG) for deployment and delivery of mobile-based services by end of FY 2012-13 [7]. However, the usage of these apps among the rural population is yet to be validated.

Prior research has reported very low text entry rates (3-6 wpm) for Indian languages compared to their English counterparts (20-43 wpm) [3] & [4]. But the social prevalence of apps like whatsapp have made the emergent users explore various text input methods. In the next section, we discuss our method, the locations, and the users that were interviewed.

METHOD

This study attempted to figure out smartphone usage amongst the above mentioned demographics by means of contextual enquiry. In the process we asked users to perform certain functions on their phones like transferring media via certain apps, browsing through and accessing media, etc. We also enquired about the kind of data they download and possess and also collected the artefacts (if they were comfortable sharing the information), and tried to understand trends.

Keeping in mind the vast difference in urban and rural cultures of India, we conducted our interviews in Mumbai (11,23,74,333 [2011]), & Wai (36,000 [2011]), Menavali (Rural, population 2,231). In Mumbai, we conducted interviews in multicultural residential as well as commercial neighborhoods, Thane, Hiranandani and Powai.

Moderators had people from different language backgrounds (Hindi, Marathi, Tamil, Malayalam) and had a mix of both genders. We recruited 107 people in total whose educational qualification was less than 12th standard. We ensured that our users are sufficiently diverse. The following table gives a detailed breakdown of the interviewee demographic.

Gender	**Age Group**				**Education**					**Location**		
M 86	<25:	25–35	35–45	45>	0	<4	5–7	7–9	>10	Mum	Wai	Menawali
F 21	19	38	25	25	6	8	15	32	46	48	56	3

Table 1. Gender, age-group, education and location data of the users.

We spoke to people of varied occupation including drivers, housekeepers, homemakers, shopkeepers, mechanics, vendors, hotel-staff, scrap dealers, cleaners, municipality employees, etc.

OBJECTIVE

The focus of the user study was understanding the effects and extent of smartphone penetration on communication, entertainment and security. To figure out smartphone usage of people who are educated up till 10th standard or less. The intent was to study the way people of this demographic are using their phones, the breakdowns in their usage, and the design interventions which we can offer in order to make their experience more fulfilling. In this paper, we present our findings about media and entertainment, Apps and Apps Usage, App Store. (needs expansion)

Anecdotally, we know that Whatsapp has become very popular —lot more popular than SMS ever was in India. Indian language text input is on the rise—also a whole lot more than it ever was on basic phones. Using phones for gaming, music, videos and entertainment has gone up. It is contestable if FM radio has seen a decline. E-commerce has become very popular— and reports suggest that more people use mobile phones for online shopping than desktops. Are people more concerned about security of their devices now? Has smartphone usage affected the use of feature phones? Surely in many families there is a mix of both type of phones. How do these technologies co-exist? What new forms of sharing are emerging?

As we got more interviews, we expanded the focus to different apps used for communication, sharing data and how they used their feature/basic phones. After the field work, we analysed data using the method described by [Beyer, H., Holtzblatt, K.: Contextual Design. Morgan Kaufmann, San Francisco (1998)] to identify the important user statements, observations, insights, breakdowns, and

design ideas. This was followed by a bottom-up affinity of the findings which was built to discover patterns, resolve differences, and identify higher-level insights and design opportunities.

FINDINGS

Ownership: Purchase and Usage Decision Making

Smartphone ownership is looked at largely as an individual issue, but it is also common that one smartphone is shared between members of a family. The ownership is also subject to social hierarchies, while usage patterns are different amongst different age groups. We discuss notions of ownership, sharing of information, recommendations and access.

Purchase Decisions: Bada Phone Buys Social Status

The Indian not-very-literate smartphone user goes through a lot of difficulty and ambiguity while buying a new smartphone. There are multiple questions in her mind, and influences ranging from social circles to business circles, dynamics within the family, image building, etc. They assign the smartphone a higher social status and owning one is often matter of pride, "Log sochenge ke ye koi toh hai." (People will think this guy is big deal.) The other behaviour observed is that people feel left out when not using WhatsApp and end up buying a smartphone to maintain communication, coming under peer pressure.

At the same time, many users of the given demographic did not feel the need for a smartphone, and were apprehensive about their ability to use a smartphone due to their education levels and language barriers. These influencing factors and deterrents are discussed in detail below.

Peer and Other Pressures

Many users had started that a larger or better phone boosts their confidence of social standing amongst peers. In such cases, phones are purchased even if the utility of the phone is not fully understood, appreciated and utilised. There were users who were gifted the smartphone by relatives from Dubai, and it could not be refused.

Negative Experiences: Stronger Testimonies than Positive Ones

We found that negative experiences with software products and services influence the buying and usage behaviour of communities in a way much stronger than the positive ones. Apps and ideas are seen to be prone to elicit sustained aversion from whole communities owing to bitter experiences. WhatsApp, for instance, is condoned in a neighbourhood after an intimate video got leaked from a phone and went viral on the platform. Similar stories reinforce the finding when it comes to online shopping; Flipkart refusing to offer Cash on Delivery (COD) to small towns like Wai has turned people off the idea of using their services at all. Even when the community is comfortable with Naaptol and TV-shopping.

Retailer's Push: Brand Monopolies

In the city of Wai, retailers are the key influencers and primary sources of information for smartphone buyers, and often push their customers to buy the brand they represent (or work for). A user receives updates and news on gadgets from his mobile shop owner'ß WhatsApp group. The retailers have considerable influence on the choice of phone and accessories. Buyers often spend a lot of time discussing options and specifications in detail before making a decision. A family in Wai has been planning to buy a phone during an upcoming festival along with the local retailer for over three months.

The Truly "Sasta Sunder Tikaoo" (Cheap, Beautiful and Long-lasting)

Money flows in the direction of value. If the cost of any service increases without proportional increase in value, people tend to stop using the service altogether. And the vice versa is also true. People pay for where they see value. Most often, a user sees no purpose of buying a smartphone if he expects no additional value compared to the existing phone. This phenomenon is not limited to paid apps and services—a person bombarded with irrelevant forwards on WhatsApp groups uninstalled out of annoyance, while for another, the same forwards served the purpose of entertainment and he willingly pays INR 1000 per month (~15 US$) towards it as of data and subscription charges.

With increased interaction and experience with mobile technologies, people have begun to learn where and how to increase utility while reducing costs. For instance, people use SIM cards from different service providers—one with lower data charges for data use, and one with lower call rates for calls and messaging. Most people update apps only over WiFi as it is cheaper and often less interrupted.

Aesthetics, Quantity Over Quality

Phones with larger displays, sleeker appearance, and fewer tangible buttons are considered 'better looking.' Larger displays and louder speakers were priorities, but there was no mention of screen resolution or quality of audio output. There is also a need to belong to a certain class, where a smart-phone or big-phone 'look' became the definitive factor in purchase decisions.

Physical Sturdiness: profession-proof phones

Many users, especially those involved in physical labor or frequent travel, preferred phones that appeared sturdy. These users expect their devices to be prone to accidental falls, and that the phones that will function even afterwards. A mechanic and a maintenance worker, whose hands are often dirty at work, worried about having to touch a smartphone screen during work. The lack of sturdiness seems to be the reason why many users have not migrated to smartphones yet. If designed to be as rugged as feature

phones, they are more likely to be accessed by the rural, semi-rural markets.

Battery Life, The Holy Grail of Smartness Seekers

Users whose professions require a high level of mobility—like drivers—require phones that can last for days on a single charge. Smart phones do not provide that luxury. Some had portable chargers and AC converters installed, while others stretched the limits by avoiding data usage and other activities that drain battery. In some such cases, the 'smart' features are not utilised fully and a feature phone with long battery life is found more desirable. A user who works for the Municipal Corporation of Wai specifically searches for phones that are Nokia battery compatible, and replaces the stock battery with a (albeit cheaper, duplicate) 'Nokia' battery.

Low Maintenance, High Preference

The tendency of the Indian consumer is to use any object to the fullest and delay the decision to discard.* Even when a phone is damaged, we found users continue using it as long as it was functional. There were some feature phone users who had broken screens, but hadn't repaired them since the phones were functioning despite the damage. Another user, whose phone's rear casing was broken enough to reveal the battery, said that he didn't feel that it was worth the effort to mend it since the phone worked even in that condition.

Many users felt that the cost of repairing a smartphone screen was too high compared to the cost of the phone itself, in some cases almost as much as the cost of the phone itself. This discouraged some users from repairing the phones themselves.

Many are uncomfortable that the almost all of the interface of the smartphone comprises just the screen, which also happens to be the most fragile part of it. This excessive dependence coupled with the high cost of replacement discourages some users from repairing phones with broken screens. Some of these users revert to feature phones as they see that to be economically more viable. A solution to these issues could be the introduction of a cheap sacrificial layer on top of the screen that can take some of the impact of falls. This could bring down the phone repair costs drastically, as well as stop a large amount of electronics reaching the landfill.

Smartphone as the First (and only) Computer

In the areas of app usage and behavior, unique problems and interesting adaptations are observed amongst the interviewed users. For many, the smart-phone is their first 'computer'. As more people take to smartphones, entire new communities are teaching themselves how to use the technology, while their communication habits evolve and begin to grapple with existing social norms.

For purposes both personal and professional, for bonding and clarity, the order of preference for communication is often face-to-face, then voice call, then texting. For the longest time, internet based social communities have been criticized for moving the majority of communications to the bottom of the ladder (i.e. text communications), in turn fiddling with the nature of human relationships. Lately, with access to cheaper and faster internet people have better access to voice and video calling options, which restores technology to the position of an enabler. For instance, video chats on hangouts, skype, and IMO cost much lesser when compared to the usual ISD calls.

Content-creation apps have eliminated the need for specialised computer knowledge and access, and have put the power of making composite images and compelling text messages in the hands of the smartphone user. A user actively creates and shares images of social and political relevance.

Increased access to WiFi, which is usually a more reliable, cheaper and faster source of internet, has led people to explore deeper and wider. People download and browse many more apps and services on WiFi than they were ever able to do with the intermittent data packs prevalent earlier.

Installing Apps at the Retailer's

A big chunk of the interviewees got their app-store logins and registration completed at the retailer's. Most essential, popular social-media applications as well as media consumption and sharing apps (ShareIt, games) were installed by the shopkeeper, and users were often often walked-through the basics. One particular retailer had an active WHatsApp group set up to broadcast updates, news on new arrivals and personalised app suggestions. This works as a barrier-breaking intervention for most non-literate users.

Bypassing Playstore: Alternatives and Workarounds

PlayStore is neither widely 'understood' nor found easy to navigate by the users we talked to. Sometimes, the existence of it is not known even to long-time android phone users. Some users have never used the internet, and aren't aware of the PlayStore, or that an email address—in itself an alien concept to many—is required to gain access to it. This requirement itself maybe a factor preventing widespread acceptance, unlike Whatsapp, which simplifies the onboarding process for most users in our user demographic. Among those who are aware of PlayStore and use it intermittently, language surfaces as a major barrier to gaining competence. [1] Many among this group rely on icons and automated suggestion lists. When they rely on text, workarounds like reading the first syllable to guess the

word are employed. ('Mo' is Mobile.) Some seek the help of others to search specific names or keywords that are suggested to them.

Sharing Apps, Saving MBs

Language and tech barriers, and a need for independence from service provider data usage have made alternatives like sharing apps via ShareIt, Xander, Zapya, etc. popular. They employ device-to-device communication protocols like Bluetooth and localised wireless which reinforce the local, immediate social structure that anyway triggers such sharing. One bottleneck is the need to have the same sharing client installed on both devices; ShareIt seems to have the numbers advantage, and is the most popular one. [5] Face-to-face interactions have a stronger correlation with the number of shared apps between individuals than self-perceived ties.

Social Dynamics is Reinforced

Conversations are regulated, often voluntarily and sometimes according to explicitly set rules, when a higher authority is present in online social groups. A politician we talked to says he is very careful when posting to a certain group where "hastis" (his term for bigwigs) are also present. He limits the number of things he shares, and limits it to very relevant things.

A similar replication of social ties is visible in the popularity of device-to-device sharing of data and shared access points discussed later.

She always gets a 'hand-me-down' phone.

Social hierarchies can be seen creeping into determining phone usage in the indian society.The familial and social hierarchies are carried over to online networks and phone usage.

External factors control women using smartphones.The smartphone is first brought in by the men in the family and handed over to women after usage or when a replacement arrives. The concept of shared smartphones arise in many families where only one smart could be afforded. Even then, even if better educated, women in the family use or has restricted access to phones—especially smart phones. Women users are often told not to access phones or the internet even when they are equally or more educated. The husband often knows that the wife can operate the device equally well, but thinks it isn't "necessary" for her to have access.

Young Ones Text, Old Ones Call

It is found that older people (of ages 30 and above) have an aversion to text messaging and they prefer calling people up, even to reply to the text messages they receive. Calls are seen as urgent, important responses and ascribed more value, while text-messaging and use of WhatsApp are seen as vices young people engage in. A mother complained it is disrespectful to guests when the son doesn't look up from his cellphone and continue texting; she says being on a call would have been excusable since there is a perceptible involvement in the activity.

Unfamiliarity with the text-input interfaces and language barriers (in writing) were also cited as reasons for never having tried, or having given up text messaging. The open-source local language keyboards aren't widely used and the built-in ones are cumbersome.

The younger members of the family help adults with smartphone usage. Sometimes, children teach by demonstrating, but often are impatient and quickly do the job for the adult. If the adult fails to learn how to use a certain app or function, or forgets later, they continue to be dependent on the child whenever that action needs to be performed.

Many Lives of the Device

When a smart phone is purchased to be shared in the family, it is often supplementary to the feature phones that each member of the family already owns. The primary user is often the male breadwinner and the phone is then shared by the wife and children; or one is purchased for a younger member of the family, but used by all for their specific requirements such as email or browsing. In an instance, a young member of the family uses the phone exclusively for the games, and even keeps the game app under security lock.

The Internet Cooperative: More Access, More Usage

People want to start using internet as it is a rich source of information but they do not use it yet since it is not affordable in some cases, while in some the phone has no provision for it. There is an instance where a user said it is a pool of resources. When there is free wifi people use internet extensively. Few start using the internet due to the availability of free wifi or shared wifi. Anomalies being, a user called(using hangouts) on his brother's phone using the hotel's(where he worked) free wifi; another mechanic used the petrol bunks wifi for which he worked. Despite being an illiterate he was well aware of the internet due the availability of free Wifi.

A few realise that once on the net they need to stay connected while on the move also. Many users use both data and wifi but they feel downloading is slow and expensive while using data over wifi. The people who have access to internet have definitely explored the phone better while those with no provision explored it less. Such people must be made aware of the advantages of internet and help them with their experience. This will eventually improve the familiarity of the apps and the phone as such.

EMERGING PATTERNS

Blue Box is to Facebook, as Green Bubble is to WhatsApp

A considerably large set of semi-literate users have learnt to navigate the operating system with the help of icons (of Apps and functions) and partially reading the textual content. They rely heavily on graphic representations of the tasks at hand in case of functions/actions (play video, mute, etc) and associate specific colours and shapes to icons of the applications they want to use like a user recognizes facebook with blue box and WhatsApp with the green bubble. Similarly another user recognizes menu items by guessing the word from the first syllable (Mo is mobile and Ca is calculator).

Jo Dikhta Hai, Wo Bikta Hai (What is Seen, Sells)

Visual cues are also 'satisfying' and keep them from further experimentation. One user says "JO DIKHTA HAI VAHI BIKTA HAI" – "JO DIKHTA HAI VAHI USE HOTA HAI". They tend to use only those features which are noticeable at the first attempt. The main reason given is the unfamiliarity and they often find it intimidating to explore other features of the app fearing something going wrong. One user knew WhatsApp is made for chat and using it he can send media files, but he just didn't know how to; they end up following comparatively more complicated processes to share media, involving a lot of steps.

Get online; Get rich

While most small businesses either integrates applications like WhatsApp quite well into their operations (vendor shares pictures of stock, mobile store owner sends updates to community), most users do not think a smart phone is essentially required for business or work, and is perceived as a tool that may aid them in business. Some find integration of WhatsApp with work very tedious. While a lot of users actively use internet for work and business related queries, a clear distinction between "business" and "personal" while using a smartphone is observed.

Jugaad

Ingrained in the Indian DNA, Jugaad is seen in the way people use their mobile phones as well. For instance, a housekeeper with a very tiny screen on his 'Chinese phone' uses a toothpick as stylus for typing and playing games. Another person using a smartphone solely for WhatsApp buys cheap new SIM cards every month to use the free month of internet that the service provider offers, while keeping the WhatsApp number the same.

Jugaad-ing Apps for Specialised Purposes: yes to Facebook on opera mini, no to Facebook apps

Friends and relatives play a major role in determining which apps people use. In most cases otherwise, users depend on pre-installed or shop-owner-installed apps. Interestingly, users puts the same app to multiple uses, often even ignoring the intended features. For instance, a user accesses Facebook only via Opera Mini, unaware that it is a web browser; another uses Google Now for app search, unaware of it being able to search everything.

However, a few people have valid reasons for similar behaviour; they feel individual apps occupy too much space leading to slow performance of their device, and end up using one app for many purposes.

USAGE DETERRENTS

For interviewees in both urban and rural demographics, smartphones have become a great help in their regular activities, as in communicating through new ways like WhatsApp which are widely accepted, but they still have a fear of accepting or exploring new apps and features as there remains some ambiguity in whether they might accidentally damage their smartphone in the process. The many factors which aid and deter apps or even smartphone usage are detailed further.

Delegation of Learning Functions of the Apps

A major breakdown is delegating the learning stage of using an app. While a lot of popular apps thrive on their simplicity and high utility, a lot of users still depend on their friends and family to assist them in 'technical' aspects of their phones. The initial download, install and setup aren't things that everyone is comfortable with, even with the seemingly simple applications. Delegating these tasks to young members of the family or tech-savvy members of their social circle, users often remain unable to form clear conceptual models and graduate to higher thresholds of use.

Local Languages: Second Class Citizens?

Unfamiliarity with language (mostly English) is a fundamental issue when it comes to using a smartphone for the first time. Many users stay unaware of the ability to set the interface to native/desired language being freely available. Not being confident about English leads to a misunderstanding that smartphones could only be used with English language and are meant only for people who are educated or at least know English really well.

On the contrary, many people have tried local language keyboards at least once and have mixed reactions. Few users have had bad experiences typing in local languages on previous phone models, and hesitate to try the local language keyboards in smartphones. One user says "Marathi se dimaag par load padta hai." Interestingly enough, people uncomfortable using local language keyboards were the ones who have been long-term users of mobile phones. They are so habitual to the English keyboard that their mother tongue feels like a new and uncomfortable introduction to the phone interface. They also said they try to learn English from apps. One user played the game 'Criminal Case' to learn new English words. On the other

hand there were people who had installed Tamil and Marathi interface and they saved all the contacts in local language and even played crossword games and Shayri (Urdu verse) apps to improve their local language skills. The implication is that people new to phone usage try local language keyboard and if found not really simple, quit using it.

MBs are Valued, Internet is Feared

The new smartphone users are not confident about what an unknown app could do to their phone. In most cases, the Google id is created by the shopkeeper herself or is delegated to sign-up to playstore, and the users often tend to use only certain pre-recommended apps. In the first few weeks, mostly music, camera, calculator and WhatsApp are used. A user couldn't spare the effort to explore and understand each app icon and what it represented, and uses his smartphone just like a feature phone. A user has the notion that free apps might spoil his costly phone. The fear of internet is often manifest as the fear of "unknown." There were users who considered WhatsApp and IMO video chat to be "just data" and didn't realize that even that's part of the internet, and considered 'internet' to be a separate entity which they feared was a threat to their phone.

"Whatsapp wala" phone

It was found that buyers refer to smart phones alternatively as "WhatsApp wala phone" (WhatsApp-enabled Phone) or "Facebook-wala phone" (Facebook-enabled Phone) while the retailers stick to more technical terms. Many users do not understand these terms fully even after purchase. There were instances of users unable to make a purchase decision due to confusion about the terms used by the retailer, like android versions, configuration, camera details etc. In this gap between buyers' and seller's terminology, the choice is often based on a blind trust on the brand name, reinforced by references from friends and relatives. But this trust factor results in lack of knowledge of details about the phone itself. Positive references from friends and relatives spread within the community, and certain brands have entrenched their positions so well in Indian market that entire communities have developed loyalty for those brands. Samsung is ruling the roost in this regard in Wai. Most of the users we met in Wai own a Samsung smartphone.

Out of Sight, Out of Mind

While the users are concerned about phone memory usage, many do not know unused applications also take up space. Some users hadn't uninstalled unused applications because they didn't know how to or do not seem to have the time to undertake the uninstallation. There are other apps that they think will be of use someday, and uninstalling them is not seen as a priority.

ALARM APP IS OK, BUT I WANT MY CALCULATOR

The users prefer app versions of tangible artefacts and otherwise, depending on the level of cognitive load each activity demands, as well as the frequency of use. In this section, we discuss the varied reasons that emerged from the contextual enquiry as well as pointers and design ideas.

Phonebook versus Notebook: On Accessibility and Safekeeping

Taking down numbers in the phonebook app is seen as a tedious task by users who do not know how to save contacts in the phone or how to type, so they ask the concerned person to input and save the contact for them. Some users do not save the contacts at all if they find it too difficult. Those who are proficient in saving contacts, exercise discretion and save only the contacts they feel are of potential importance to them. Applications like Truecaller help identify unknown callers. The most common method of backing up contacts is to write them down in a diary, so there is no chance of losing the contacts even if the phone is lost.

Radio Trumps the Phone

Most (but not all) people who listen to radio prefer an actual radio with a loudspeaker (when available) to the one in their phones. A mechanic we talked to has a cellphone with a built in radio, but chooses to listen to the radio from the next shop. People with actual radios do switch to the phone, only when the physical one stops working. One needs to read this along with the observation that people like loudspeakers for the hands-free convenience while multitasking, and that the FM radio interface is often not easy to navigate. Drivers and shopkeepers—the demographic that has more free time—listen to radios installed in the vehicles and shops while dedicating the phone for conversations.

Hands-off, Louder: Ways of Listening Social

Even in public, people prefer to play audio through loudspeakers either built into their mobile phones, or through external speakers installed in workspaces. In such instances, listening to music becomes a social activity. The need for loudness and the convenience of not having to walk around with wires while working are often cited as reasons. A few users were aware of, and concerned about health implications when using earphones; even when plugging them in was necessary to access FM, they switched to loudspeakers.

Saving Seconds

Saving even a few seconds is crucial for frequently performed tasks like app locking, making calls, messaging, quick and frequent calculations, etc. In situations where using apps for these tasks become tedious, users often move to physical alternatives. For example, the seconds lost at the phone lock-screen before making an urgent call caused

some users to stop using the security feature itself. A few shopkeepers we talked to, have quit on the calculator app and moved to the physical calculator. This tediousness often stems from the amount of attention that purely screen based applications demand. A reduction in conscious involvement (by eliminating interface tediousness) in completing frequent tasks would go a long way in help people make full use of their phone-based utilities.

DISCUSSION

We find that social dynamics play a key role in determining what works with the Indian user and how. Similarly, tangibility has a lot to do with routines and working styles of individuals. One needs to be responsive to these specific emerging patterns when designing for the new Indian smartphone user.

REFERENCES

[1] Chipchase Jan - Mobile Phone Practices & The Design of Mobile Money Services for Emerging Markets(http://janchipchase.com/content/publications/) - 2009

[2] Devanuj and Joshi, A, Technology Adoption by 'Emergent' Users – The User-Usage Model

[3] Joshi A - Mobile Phones and Economic Sustainability - Perspectives from India -2009.

[4] MacKenzie, I. S., and Soukoreff, R. W. Text entry for mobile computing: Models and methods, theory and practice. Human–Computer Interaction, 17(2-3), 147-198- 2002

[5] Nadav Aharony, Wei Pan, Cory Ip, Alex (Sandy) Pentland, MIT Media Laboratory, USA: Tracing Mobile Phone App Installations in the "Friends and Family" Study

[6] Taylor David G., Levin Michael - Predicting mobile app usage for purchasing and information-sharing.(http://www.emeraldinsight.com/doi/full/10.1108/IJRDM-11-2012-0108)- 2014

[7] UNICEF, Digital Empowerment Foundation (DEF) - Mobile phone - A tool for social behavioral change (http://msbcindia.org/wp-content/uploads/2014/02/A-Working-paper-book.pdf)- 2013

[8] Watkins Jerry, Kitner Kathi R. - Mobile smartphone use in rural and urban India.