Anthropology, Development and ICTs:
Slums, Youth and the Mobile Internet in Urban India

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ABSTRACT

In this paper we present results from an anthropological study of everyday mobile internet adoption among teenagers in a low-income urban setting. We attempt to use this study to explore how information about everyday ICT use may be relevant for development research even if it is largely dominated by entertainment uses. To understand how ICT tools are used, we need to study the spaces users inhabit, even if these spaces are dominated by mundane, non-instrumental and entertainment-driven needs. The key here is for ICTD discourse to situate insights from anthropological studies (such as this one) within an understanding of what drives a specific user population to adopt technologies in particular ways. Clearly there is a link between context and use, and understanding this may be invaluable for development research. Adopting a narrow development lens of technology use may miss the actual engagements and ingenious strategies marginal populations use to instate technologies into their everyday.

Categories and Subject Descriptors

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms

Human Factors

Keywords

Mobile Internet, Urban Slum, ICTD, Anthropology

1. INTRODUCTION

This paper engages with twin goals: first, to offer results from an anthropological study of everyday mobile internet adoption for entertainment in a low-income setting and second to discern impacts and consequences of this study in ICTD research. The study is primarily an anthropological exploration of ICTs and youth practices in an urban slum in India, looking at motivations, engagements and adoption of the mobile internet into the everyday. The paper seeks to address the tensions in expectations and approaches of anthropology and ICTD in studying ICT devices as technical tools for human centered socio-economic

progress. We attempt to explore intersecting spaces in the two approaches towards the study of technology adoption in diverse contexts of development.

1.1 Anthropology and ICTD: A dialogue

It is purported that "ICT can enable solutions towards human progress when applied with a broad understanding and a multidisciplinary approach" [7]. Anthropologists ground their research in the deliberate and extended use of technology where 'the user embeds the device into his every day and makes it his own' [4]. Despite the broad and liberal definition, the ICT for development community tends to privilege what are and what are not desired/legitimate developmental impacts of technology. For example, it is fair to assume that most of the ICTD community would agree that mobile phones are clearly development artifacts when they are associated with a rise in livelihood opportunities. However, if mobile phones simply fulfill entertainment needs, many in this community will question the relevance for development. This leads to the argument that the phone contributes to development goals only if it transfers micro-credit and not a ring tone to a client and that mobile money is an ICTD tool only because it aids migrant urban labour to transfer money back to their native village and not to buy a ticket for a cricket match. From an anthropological perspective, this distinction is arbitrary, even harmful, because it unnecessarily blinkers the ICTD community into looking only at a narrow slice of the full range of human experience of the people who are using the technologies [24]

How would an anthropologist attempt to understand the acquisition and use of the mobile internet in a poor urban context? First, anthropologists would begin research from observations of everyday life, namely, what is happening around them and not what problems need to be solved [10]. To an anthropologist, the proliferation of mobile phones and new media pose new questions on their sociocultural effects and impacts on users and in contexts of use. Capturing the rich experience of technology in the everyday of poor urban youth offers a research opportunity to investigate how ICTs are used for interaction 'at the margins' of urban society: Will it make youth more employable? Will it enrich their individual, social and cultural lives?

ICTD research is concerned with designing a development project for socio-economic welfare and evaluating the resulting impacts in an underprivileged context. In this paper we attempt to revisit and open up critical spaces in the realm of ICTD related to perceptions of poverty, the needs of the poor and use of technology for development goals. Firstly, poverty is not a homogeneous terrain open to uniform ICTD interventions. It comprises people of varied material status, economic aspirations and social dynamism. Similarly the poor as subjects for ICT interventions need fine-grained understandings of their internal

distinctions, capabilities and limitations. This means the ability to view the poor as a dynamic social category with active agency to adopt technologies rather than inert recipients of developmental action. If development is understood as fulfilling human needs (i.e., providing better lives for the poor), are these needs a homogenous category, only including primary goals for human progress? Are certain needs, like good health, education and stable employment more fundamental than other needs, such as social interaction, entertainment or religion for positive development impact?

Our research investigates an urban slum and the self-driven engagements of teenagers with the mobile internet. We observed and recorded characteristics of teenagers, mobile internet use and their interrelatedness to the context of the urban slum. Along with other researchers [11,15,16,17] we address limitations of focusing on reviewing poverty (the site) and the poor (the needs) as primary agendas for ICTD by uncovering the richness of contextual technology use that may or may not be 'developmental' in scope (by some narrow definitions of development). Rendering youth, who belong to a low-income population even if they do not occupy the lowest rung of the socio-economic pyramid, as recipients of development initiatives is problematic if they exclude the role of agency in the acceptance or rejection of technology as tools of development or social progress. Young people purposively select aspects of technology use that best suit their lives. We may ask two things: 1) Can everyday ICT usages engender self-empowerment without the need to explicitly characterize them as developmental? And 2) Can entertainment-driven usages comprise an important domain of usages from an ICTD point of view?

To understand how ICT tools are used, we need to study the spaces users inhabit frequently, even if these spaces are dominated by entertainment-driven needs. This perspective does not smoothly crossover into the ICTD world of technology utilitarianism. Also, there is much to be gained in (re)examining mundane, non-instrumental practices without which our endeavors to frame users remain incomplete. During our fieldwork, we observed several indicators of subject perceptions of ICTs and the usages they put them to, and we believe these make a significant contribution of ICTD. However, we also believe that a further contribution is the formulation of a vision of ICT uses guided by anthropological exploration rather than a purely "development" perspective. ICTD research can benefit from the recognition of the rich experience of technology revolving around the need to self-direct and create spaces of expression; how access and connectivity come to be forged and what prolonged ICT access amidst young people living in urban and marginal locations results in. We believe anthropology can fill the gap existing between technology design and technology use, by contextualizing a variety of rich user appropriations. The theoretical and methodological tools anthropology employs can enable a rigorous analysis of the cultural rules, resources and capabilities of a socio-technical system. Anthropology begins investigations from the actual sites of internet use. These are specific configurations of use in specific social contexts where users understand internet technologies and manage, share and expand use.

The paper has four sections. First, in our literature survey we do a quick review of the ideological underpinning of ICTD as research domain. We also scaffold this section with a few anthropologically informed ICTD treatises. Next, we describe our methodological premises guided by multiple frames of reference during field observations and interviews. Third, we describe some

of the results from our study about appropriations of mobile internet for entertainment by teenagers in a slum in Hyderabad. Finally we discuss our findings by reviving entertainment related usages of ICTs as a valid subject of research in human development and social progress

2. RELATED FRAMEWORKS

Most ICTD research is tightly linked to clear socio-economic outcomes. Much of the normative literature in ICTD, despite differences among individual ICTD initiatives, contextual practice and local impact, subscribe to an ideology that privileges community development in the domains of health, education, and livelihood opportunities. Despite the diversity of communication ecologies and infrastructural resources across the globe and the diverse range of disciplines in ICTD involved in studying them, we rarely see theorists or practitioners go beyond a deterministic utilitarian view of how information technology can lead to socio-economic development. Nations often envision ICTs as powerful instruments enabling democratic, accountable, and transparent public sector-civil society transactions by providing privileged access points in rural communities. Among key players in India, there is a widespread belief that ICTs will support economic and social development by facilitating participation in global markets, promoting political accountability, improving delivery of basic services and enhancing local development opportunities [29, 32, 33] World charters of development bodies [23, 39,40,42] believe in ICTD as an agenda for digital inclusion in a bid to empower underprivileged communities. That said, a growing body of research examines the mutual shaping of ICT use in everyday life and users' self-understanding of these [5, 8, 26, 28). These can be situated within a framework investigating issues of identity, expression and agency and not necessarily in the language of development or progress and provide another lens through which we can view digital artifacts transcending their literal or functional meaning [37]. Cultural theorists [22, 35] provide a framework against which we can examine technological artifacts 'not for what they are but for what they enable.'

We draw upon anthropologically driven approaches [27, 31] in the study of ICTs, both as social artifacts and as tools for development. We do this primarily to frame an ethnographic research on entertainment driven adoption of ICTs. More importantly, we generate a discussion on viewing such an adoption as one critical to an understanding of or intervention in the domains of human development and social progress. We argue that an anthropological approach can uncover the interdependencies of technology use and social contexts leading to changes in a variety of proficiencies with technology, especially the changing everyday practices of youth as more digital technologies are made available and affordable.

Why then do anthropologists study the internet? Some analyze it as a new addition to mass media, others as an interpersonal communication tool or new system of corporate organization, and others as a device that facilitates trade [36]. Such a perspective demonstrates in numerous ways the interpretive flexibility of technology: that the meanings and uses of a machine or system are not predetermined by the form alone, but come to be understood in distinctive ways by different user populations. Following Appadurai [1, 2] on how electronic mass media fuels aspiration and agency, the internet is viewed not simply as a resource to be acted upon but one with consequences for everyday behaviours. In encounters of the internet, imagination plays a critical role in the way it shapes social practices. In taking this stance, this paper joins many other works of ethnography and

historiography [6, 8, 9, 18, 26, 27). In such works, a range of social circumstances have been treated as sources for diverse interpretations of technology: to explore subjectivities and identities and how the internet came to be distinctly appropriated by socially diverse user populations.

Horst and Miller's (26) ethnography attributes the rapid and ready adoption of mobile telephony among low-income Jamaicans to its successful absorption into the local forms of networking practices. They use the term "link up" to refer to local networking patterns in mobile phone adoption. Two theoretical frameworks stand out: The first is the conception that ICTs (including an expanding array of mobile phones, computers, Internet, and other telecom and portable digital media hardware and software devices) can be "deployed effectively to close the 'digital divide' between, the 'haves and the have-nots' by addressing issues of their effective access and use" [14]. The second is the conception of ICTs as meaningful tools bearing social value, value which has been necessarily brought about "through conscious acts of configuration, mediation, and active interpretation by social actors" [13]. In their study of the Moroccan informal ICT economy, Ilahiane and Sherry [20] use these theoretical frameworks to focus on the 'articulate entrepreneur' or the 'processing conduit' for global markets at the centre of a thriving informal economy (popularly be called the black market). This focus paves the way to a discussion on the rise of informal actors in emerging markets and the nature of their multiple, complex and carefully cultivated business relationships, what the authors call a 'mosaic of economic relations.'

We argue that though there is no one 'correct' theoretical stance when looking at young people and technology, anthropologists would remind their audience that a full analysis of the ways in which a technology are used by a young person requires a deep understanding of the social and interpersonal circumstances in which technologies exist, and through which they attain their meaning. This stress on the environment, or the ecology of development, allows for explorations in the differences between individuals depending on the circumstances in which they develop. If the individual is an agent in his/her own development, there can be no pre-determined outcome to the development and implementation of technologies. Instead technologies are subjected continually to a series of complex interactions and negotiations with the social, economic, political and cultural contexts.

3. METHOD

The anthropologist in ICTD research studying a development intervention will typically undertake 'thick' ethnographic [19] descriptions of developmental contexts. Next, they would frame descriptive data through analytical frameworks to unpack the interrelatedness of social context and individual use. Our study is ethnographic in nature and aims to study and engage deeply with a small sample of users. Hence, from a focused and deep engagement with a set of users, our findings are indicative of broad trends and patterns of behaviours. We employed a variety of qualitative methods, including open-ended interviews, observations of community life, and semi-structured baseline surveys, all aimed at achieving a "thick description" of contexts of technology use.

We chose our field as Hafeezpet for two reasons: one, its fit to a typical unauthorized and informal urban settlement we refer to as slums; second, due to its proximity to the vast public infrastructures in the IT hub of Hyderabad, a burgeoning global IT city of India. The slum quarter stands on unauthorized land currently in the process of being regularized by the government. Hafeezpet consists of three neighborhoods, two on either side of a highway that emerges from the Hi-tech Park and arrives at the Hafeezpet railway station. Two smaller sectors of Hafeezpet Aditya nagar and Prem nagar lie on one side and a third sector Marthand Nagar on the other of the highway.

The study was conducted in two phases. Initial investigations in the month of November and December 2010 consisted of observations and semi-structured interviews with civic and political leaders in Hafeezpet, as well as with shop owners who traded in mobile phones, ran a video gaming parlor or a cyber cafe. Our aim was to speak with key informants who occupied important local administrative positions, represented a sample of ICT-enabled businesses who would map out the demand and consumption for ICTS like mobile phones, the internet and on/off line gaming. Public spaces like shop fronts, households, traffic intersections, and crossroads, as well as communal spaces like street corners, weekly street bazaars, were observed to record the "everyday" life of Hafeezpet. This process shed valuable light on the political economy of the locality.

The second phase took place January to April 2011. This field work involved more in-depth and semi-structured interviews with 20 randomly selected teenagers living in Hafeezpet between the ages 15-19. We interacted and profiled each subject over several weeks and multiple interviews (an average of 30–90 minutes per interview). Some of these respondents also emerged as key informants and field guides, providing valuable insights into everyday internet use. Our initial focus was to observe the processes by which teenagers acquired mobile phones and activated and used internet on their mobile phones. From a broad understanding of these behaviours we narrowed our focus to understanding the persistence and sustenance of usages. Of particular importance were tracing the paths of access, use that sustained these behaviours.

A number of teenagers offered coherent pictures of how they fit the internet into their lives, and what they gained as a result of these practices. Many described straightforward sets of functions that the internet allowed them to carry out, not just as a technical tool but as a social tool: talking to friends, interacting with other people, communicating/chatting with friends/family; listening to music; playing games; watching movies and video clips; and having *fun* sharing unique experiences fashioned by this new entity called internet. They spoke of using technologies as a means of 'finding comfort', a way of managing and building personal technology infrastructures as an important element in conducting their own lives.

All interviews were audio-recorded and transcribed. We broadly coded and organized data manually into thematic matrices to check for emerging patterns in a transparent manner. We coded empirical data to reveal connections between the introductions, enlistments and sustenance of internet use. These informed our primary analytical concern of linking the potential of an anthropological inquiry of internet use in a constrained tech-ecology at the bottom of a consumer pyramid. We further probed pivotal elements, such as the beginning and the amplification of the use of the internet, and the unfolding and maturation of skills to use the internet. More importantly, we explored how these unfolded in a context bearing financial, technical and infrastructural constraints. This led us to ethnograph spaces, both social and technical, in technology adoption and expansion.

4. FINDINGS

If we are witnessing new perceptions of and possibilities for the internet amongst the very young BOP users how do these materialize and evolve? Our study is not about a one to one correspondence of mobile internet use and livelihood or educational opportunities nor does it scope out future developmental prospects for teenagers. What it does is study the ways in which an internet resource is managed, used and integrated into the routines of everyday life among underprivileged teenagers. To do this we have taken care to maintain a focus on the context of internet use and the technology landscapes of subjects. Our study is an endeavor to relate context and internet use: a use giving rise to self-seeking, self-reliant and self-sustaining modes of interactions. This section will not only emphasize the paths and processes by which everyday internet is forged but the changes ensuing from such a contact in the lives of young users. This section provides key findings from ethnographic research and a discussion supporting initial research questions around non-instrumental ICT usages and impacts. Our key findings are centered on the following: 1) Investigate everyday entry points for internet use; 2) Identify ways the internet is understood, accessed, used and shared in multiple ways among the user population; and 3) Qualify the social paths sustaining the persistence of internet use among teenagers in a constrained infrastructural environment.

These young Internet users are non-elite, marginally employed and with a limited education that they have struggled to obtain and leverage in the down-market environment of an urban slum. Specific changes in the capabilities and practices of youth and the broader social interactions that emerged from mobile internet practices are worth noting. Importantly, the ubiquity of mobile internet services and its affordable, pay-per-use access, offered a new capacity to manage and monitor expense and use.

4.1 Acquiring the internet

This section outlines the initial moments in a series of encounters of Hafeezpet teenagers with the mobile phone and internet. Clearly, this is a social process setting the stage for perpetual interactions embedding the internet into the lives of these youth.

Entertainment usages constitute a significant portion of everyday internet use, transforming the technology experience of users that have had no previous experience with the internet. At the time of our research, twelve out of twenty profiled teenagers were using the internet on their mobile phones and the remaining eight teens occasionally accessed the internet on a borrowed phone. For fifteen of them, their first experience of the internet was on a mobile phone. Seven teens had used the internet on a computer in their schools, at cyber café or at a friend's home. None had a technical understanding of the internet but knew some of the things it could enable them to do. For most, the internet was a pathway to games, music and video, driving behaviors to browse search and identify content on the web.

For most of the youth of Hafeezpet, the internet used to be something that only existed in a cyber café. Then two years ago, telecom provider Aircel introduced the 'pocket internet' for mobile phones for a charge of Rs 5 for 3 days of unlimited use [38]. Three of our teenaged subjects were early clients of this Aircel plan and have since developed a dedicated fascination for the pocket internet. As one of them, a 16 year-old, put it, "mental kartha hai, it's blowing my mind...." It is probably not a coincidence that two out of the three cyber cafes in the neighborhood have closed down services in the last two years. The café had its advantages, with a ready-made infrastructure in place for internet

access, but it was also piecemeal, interrupted and under surveillance by the police. Omar [19], an early mobile internet user who repairs mobile phones in his brother's store, sums up his "magical" experience:

> This is magic in my palms... god knows what I would do without this. I download songs and listen to them all day, I download movies [it takes about 2 to 3 hours to download a 200-250 MB movie during late evening time] and watch them in the night when I get back home, I play games in between servicing clients... I change my internet plans as and when I come across a great one that gives me the most for the least... I am probably the quickest in knowing what plans are floating around. I remember a 5 rupee plan for three day with unlimited usage [laughs] this must be a plan to hook us as I remember the craziness in those 3 days! Now I use a plan that offers me unlimited use and downloads for 3 months for the price of 123 rupees... This times out next month after which I will hunt for other plans....

Omar's magical moments with the internet are carefully planned, scheduled, enjoyed and expensed.

Entertainment needs bring more users to the internet irrespective of their socioeconomic backgrounds, schooling and skill sets. Entertainment usages constitute a significant portion of everyday internet use and transform the technology experience of users, many of whom have no previous experience with the internet. Mobile phone entertainment was something our subjects defined as a very addictive 'time pass,' encompassing music, videos, games or chatting with or without the mobile internet. Sai, 17, a 7th grade dropout and a daily wage laborer at a construction site very near to Hafeezpet had a basic low-end micromax X265 but borrowed his friend's internet-enabled phone. In his words,

> I finish work around 5-6PM and hardly wash myself of the day long dirt when I begin texting to my friends who I will meet shortly at Naseer Bhai's medical store. Nobody at home knows what I'm up to... who can know? I use the phones of Kulbeer, Naseer Bhai's, Irfan's or Khaiser Phone ... I simply am mad about the games they have on these phones... I also browse the internet to find movie stars, songs... jokes and wisecracks in English. I am learning to download content too... It is s my most enjoyable time of the day.... These 3-4 hours of play.

The mobile phone and the accompanying internet plan come with much effort and perseverance. Ten of our subjects paid for their phones from self-earned money. Eight have hand me down phones while two were gifted new ones. Kulbeer (age 16) a high school student and active user of mobile phone internet began using mobiles 4-5 years ago. He worked this summer assisting a pharmacist and spent a chunk of his salary for a second-hand nokia N-83 to support advanced gaming. Mahesh (age 17) supplied milk packets to homes in the morning before going to school to buy a new low-end phone. Dattu (age 16), currently in high school and the poorest in our pool of subjects [his father is a 'coolie' in Hafeezpet railway station] earned his phone, a second-hand Nokia n-gage (a gaming phone), doing odd painting jobs. He has since moved to earning a small living in the second-hand rotating market for handsets, buying and selling used phones in his network of friends and acquaintances.

Subjects spent, typically in a month, an average of 50 rupees for activation and use of the internet. Almost all of them buy re-charge coupons ranging between 5 rupees to 99 rupees purely depending on how much they can afford at the time of purchase. Many deliberate on the size of downloads available for specific re-charge coupon to stagger usages and expenses. Salman says,

> ...This month I brought three 5 rupee coupons and two 27 rupee ones. I wanted to go straight for the 99 rupee plan but I know I

would finish it off in a few days… hence postponing and dragging my enjoyment….

Kulbeer, the heaviest user of internet in this study, spent around 100 rupees a month just for internet access. The 100 rupees is an amalgam of re-charge coupons worth anywhere between 5 rupees to 27 rupees. He says "I do not go for big re-charge coupons… I almost get 'mental' when I am working the internet… this way I keep a tab and also prudently spend my pocket money…."

4.2 'Doing the Internet': The learning process

Games, audio-visual content viewing, download, and other non-instrumental uses of technology are important not only because they draw people into the digital world. These uses engender collaboration, improve skills in using technology, improve language skills, information seeking skills, and targeted browsing. While internet use may eventually expand to include other (instrumental) uses, entertainment remains the hook for initial access and recurrent use. The persistent use of the mobile internet segues into a sustained experience and a new found focus. The internet is no longer a peripheral but an immersive presence embedded into the lived lives of these teenagers. Many of these youth lumped all the activities derived from the mobile internet into a single expression, "doing the internet." This expression went beyond strictly online activities to include the consumption and sharing of downloaded content and social activities associated with discussing tips and tricks, shared gaming, etc.

Learning begins from multiple sources and for varying needs. Aamir (age 18) learnt almost the entire repertory of phone functions on his uncle's internet-enabled phone as it lay around in his home. When he got his own, his first task was to activate the internet on his mobile. "This however was not a Nokia but a much cheaper China made Sigmatel S30that gave me internet for a fair price… but I couldn't understand it like I did the Nokia phone." He called customer care from his phone but was unable to follow the conversation. He then went on to record the conversation and played it back a few times to 'get a hang' of his phone. He now even re-formats his phone to rid it of viruses from the humongous amount of downloads from free websites" on it. His uncle and his friends aid and abet his mobile phone use.

Karthik (age 18) and Omar help run their family-owned mobile shops. Karthik supervises an active content download business while Omar manages mobile repairing tasks. Both are expert browsers and can teach a 'thing or two' about 'where to look for a treasure chest of free audio and video downloads'. Omar quips "I can tell you where to go for Akon and where to go for patriotic Telengana songs…." They are also self-proclaimed experts in applications like MS word, MS paint and FrontPage. Siraj (age 16) is an 8th grade drop-out now interning as a car mechanic to support the small earnings of his father who drives a truck. Bored with playing with his father's phone, he began hanging out with his school mate Sainath who carried a 'smarter' phone and "…after school I used to walk my friend to be able to feel and play with his phone … In fact I borrowed his mobile for a day by keeping a deposit of 200 rupees [in case of any damage] and toyed with it to my heart's content…." Kulbeer, Bhaskar (age 18) and Sunny (age 17) were in college and had, in their words, 'developed sophisticated usages of the phone'. They claimed they are the only ones in Hafeezpet who are on Facebook and can "Google anything or anybody." They claimed they were "acquiring education in English, mix around with sophisticated types of friends who speak fluent English, have PC in their homes and go out to the mall movies." Sunny was excited about a new browser freely available for mobile phones:,

I discovered the UC browser which has many inbuilt websites for downloading content from mobile internet… it is better than other web browsers like Opera mini, Ovi and Bolt browsers. Kulbeer reels off the capabilities of his Nokia 5300 with 2 mega pixel camera, memory card, Bluetooth, infrared, P2T, media player, audio & video recording and Internet capability…. I am an ardent fan of the UC browser and a regular visitor of Waptrick the free site for audio and video files. My 8 GB card is crammed with audio-visual content… I have downloaded applications like mobile tracker, locker and address file hide ….

Sustained, self-driven entertainment usages played a pivotal role in adoption among these teenagers. And once hooked they begin baiting their peers! The next section will characterize an interactional socio-technical context introducing, enlisting and immersing users into a space afforded by the mobile internet.

4.3 The 'adda': A socio-technical hub to do the internet

This section will characterize interactional spaces and contexts [as different from agents or people] of how the internet diffuses and transforms the world of a set of teenaged user population. The adda, a social hub, is a socio-technical system and interactional space embedding the mobile internet into the lived contexts of users. We describe the characteristics of these spaces that initiated many of our subjects to the features, usages and *thrills* of the mobile internet.

The 'adda' or the hub is an organic social formation radiating and synthesizing internet usages in Hafeezpet. As the mobile internet infused into Hafeezpet through teen adoption and as more joined the hub of users, it transformed into a viral compulsive activity. Indeed, the presence of hubs in street corners and mobile stores throughout the neighborhood makes it clear that the internet is not only a mobile but an interactional social platform. The hub is not a virtual, on-line or a digital entity: it is a socio-geographic presence filled with the youth of Hafeezpet, consisting of regular meetings to chat/learn/discuss/update knowledge of the mobile internet. Many of our respondents rely on the technology hub to learn, show off, brag and teach each other. Importantly the hub functions as an advisory body suggesting which mobile to buy, at what prices, internet plans and the latest deals going around.

We found two hubs: one, in a medical store owned by Nasser (age 25) an affable shop keeper and managed by Irfan (age 16); second, in a mobile shop run by Omar (age 19), who believed in expanding technology skills via networking the neighborhood. The hubs had some similarities and differences described below.

4.3.1 Hub1

Masterminded by Irfan, the core participants in Naseer's hub are Kulbeer, Khaiser, Sai, and Koti. Naseer is more of a benevolent absentee landlord allowing the hub to take a life of its own shaped by core users. Khaiser worked there earlier while others made it their hang-out tryst and routinized their evenings after school or work. Nasser drops in and out, delighting in the space that has, willy-nilly, taken shape around his shop. Apart from the core, there is a perpetual flow of customers, many dropping in and out of participation with the hub. It's fun time for the core: Irfan has a basic unbranded phone, which occupies the lowest rung in the hub's technical hierarchy of mobile phones. Irfan does not worry the phone has no Bluetooth option. He gets all the music he wants from Kulbeer by copying them on to his memory card using Naseer's mobile phone. Irfan says "Kulbeer's n-gage is always available for an evening of mobile gaming! I'll wait till I can afford a fancy mobile…" He recalls Kulbeer as his video gaming partner at 'Game-point', the best gaming parlor in Hafeezpet. Along with

Khaiser, Irfan visits Game-point improving his gaming skills. He believes this had equipped him with 'nimble fingers' to game on his mobile phone.

This experimentation/dissemination of skill and know-how, along with content, flows from high end to low-end phones. Sai, the gaming fan boy on the advice of Kulbeer, was a recent and proud owner of a Micromax X265 java-enabled gaming phone. Kulbeer had passed on several games downloaded from his favorite sites, made easy by his friendly UC browser. He said, "Games designed for big TV screens find their way into my mobile screen. I dig this. Why do I need a PS3? I keep digging information on free web sites… I discovered Waptrick.com. It's the Khazana [treasure chest] of free content…." Apart from 'yellow paging' internet plans, talk time deals and mobile brands/specs, the hub is a hot bed of rotating handsets. Naseer's hub was an inviting informal site of sharing and negotiating with prospective sellers and buyers of mobile phones in Hafeezpet. Mobile phones were hotly debated, features dissected and deals struck. Kulbeer, Sai and Irfan recently entered the street market place for trading used hand-sets, trying a hand at clinching deals and to gain that extra money to buy the pocket internet.

As an important and informed member of the hub, Kulbeer was building a small 'street start-up': buying used handsets of his college friends and selling them among the sizable casual and contract laborers in the area. Kulbeer has clearly emerged as the center of the hub. He is a chartered accountant, a city slicker, dominant internet user, and facilitator for learning and sharing phone information. He called himself a budding 'technocrat,' having started young with a video hooked to his home TV for playing games. He watched CNN news, NatGeo and *Kaun Banega Karodpathi* [how to be a millionaire] to update his general knowledge and to complement his knowledge of phones and web sites. His discovery of waptrick.com allowed multitudinal downloads for his own and shared pleasures. He had IDs in yahoo mail, Orkut and Facebook and hopes to access them on his phone someday rather than the internet center near his college.

4.3.2 Hub 2
The second hub was Omar's mobile shop, F.C. Mobiles, on the main road of Hafeezpet. Wasim, Sikander, Bhaskar, Yusuf and Zaheer formed the core with Omar as the ring leader. The road houses many microenterprises and young working persons who dropped in and out of the hub. Omar runs his family's mobile store, offering re-charge coupons and mobile accessories. In addition, being the self-appointed tech-guru, Omar had also begun repairing mobile phone hardware. An internet 'junkie', Omar was constantly discovering 'stuff on the net' for downloads and amassed a wealth of content. He was an expert at estimating the size and duration of audio/video downloads with an encyclopedic awareness of the current internet plans constantly under revision by service providers and identifying the right plan to manage a desired internet use. He is the resident consultant for customizing the needs of his friends to an appropriate internet package. Amidst helping customers activate and re-charge phones or tinkering with the circuit board or the ringer on a client's phone Omar would listen to songs, watch movie trailers or play games fetched by his UC browser. Much of his status as tech-guru came from the nuanced advice about fetching, managing and consuming content. In fact Omar's hub was a trouble-shooting paradise for self-proclaimed internet addicts and generic mobile phone users who gathered around him not only to disentangle everyday usability issues but to learn specific skills. Omar took credit for evangelizing the UC browser and almost handholding

his hub on the path to internet adoption and fascination. However, he was careful to withhold certain information to maintain his importance as the center of attention. In his words, he kept to himself "'he best of information that came to me after much playing around and figuring out."

Wasim and Youssef self-admittedly "learnt the 'A, B, C, D' of mobile phone and internet" from Omar. Youssef got the right internet plan for his use because of Omar. He used to activate internet with his talk time balance and got "clean wiped out" until he learned of Aircel pocket internet offers and recharge cards to browse the internet on the mobile phone. Wasim got his internet activated, look a crash course on "what buttons to press for what functions," downloaded the correct AV player form the correct web site, removed viruses, re-formatted the phone and never got to learn beyond a certain point of proficiency. Wasim mentioned, "You know I still cannot zero on the right AV player. Omar downloaded core player for me but did not share how this is done… possibly that's why he is always surrounded, like bees around a hive… We have to keep going back to him for certain things."

Omar is an 8th grade drop-out and a self-taught techie. He claimed that the lack of literary/scripting proficiency drove him to experiment and discover hardware and audio-visual content. After much beating about the bush, he admitted to his lack of language and texting skills. He cannot read his SMSs adeptly and keeps away from typing. In fact his expertise on the net and on the phone works around any capability that requires language and texting ability. Often hub members help Omar to read and reply to SMSs he receives. Omar still shies away from texting and is happy to browse, download and consume. This has not stopped him from acquiring a considerable amount of expertise and knowledge pertaining to phones and the internet. He downloads pictures to identify and memorize models and components of mobile phones.

Omar and Kulbeer, two hub leaders, are as different as chalk from cheese! Kulbeer, younger than Omar by two years, will graduate in a few years. He seeks and learns skills to operate and browse the internet from his classmates in college and brings this expertise to inform his friends in the neighborhood. He says this knowledge is "sort of *fitted* [customized]" to suit the needs and interests of Hafeezpet youth. He is casual and wears his expertise lightly and has no qualms in letting go of his knowledge and skills to train his neighborhood buddies and even the lurkers in the hub. Naseer's hub, functions more as an informal space for information mongers rotating used phones on the best buys, deals and the latest offers in the second hand market. In contrast, Omar, self-taught and self-conscious about his lack of formal education, is a teacher who never shares his books. He is all business with his clients and friendly with his hub members but is careful to maintain his position as the source of knowledge.

5. DISCUSSION
If constrained technology environments such as urban slums or how youth use ICTs are legitimate interests for ICTD research, such concerns could pave way for a subtle yet vital exchange between the domains of anthropology and development with the aim to expand a utilitarian notion of ICTs and their role in human progress.

As we noted in the introduction to this paper, anthropology can potentially open critical conceptual spaces in the ICTD domain to introspection. Our study makes a strong case for a more nuanced understanding of contexts of development as they play out in the real world of under-privileged access and use of ICTs. First, a

low-income and infrastructure-challenged space such as the urban slum is a dynamic and diverse socio-technical universe capable of forging technical skills. Second, it is inhabited by an agile and aspiring set of technology users who show agency in the adoption/diffusion of ICTs and associated proficiencies. Third, agency from within these contexts (not directed by external agents and agendas) qualifies the needs, requirements and desires to interact with and sustain engagements with ICTs.

5.1 Agents and Agencies of ICT Use

So far, this paper explored not only agents of entry but also agencies persisting with the internet: first, the kinds of people who are drawn to and evangelize the internet and second how they radiate and synthesize these experiences. Thus, from the perspective of ICTD, the internet for entertainment can provide:

- agency, drawing young persons to experience the internet firsthand

- accessibility to operationalize the internet

- platform affordability

- uniformity of experience and interaction overcoming socio-economic and educational differences

- a deep sense of play, self-exploration and learning

- increasing integration and infusion of technology into everyday use

Technology adoption and use in constrained-access ecologies may be motivated by non-instrumental usages that may not seem immediately beneficial or developmental in scope. In Hafeezpet, the use of the mobile internet completely comprises AV downloads, gaming and chatting. But these have resulted in teenagers flocking to the internet, unseen and unused before in their young lives. The internet, for the first time, comes in affordable portions, wireless, palm sized and accessed in street nooks and corners of the slum. Can affordable access set the pace for technology adoption in the formative years of a young population? Entertainment as a driver of internet use can also be a specific appropriation in contexts of marginalization or social exclusion. Why aren't the youth using pre-paid internet to surf for educational content? This brings us to the question of possibilities and opportunities in Hafeezpet and its lived world of teenagers to use the internet beyond entertainment practices. Clearly Kulbeer, Omar, Irfan and others are not seeking educational opportunities on the internet. Our subjects clearly thought of the internet in particular ways and in types of user appropriations possibly considered trivial from the perspective of ICTD bracketed usages. Still, skills such as identifying appropriate content, programs, apps and virus management can definitely be considered as positive developments that demonstrate skillful and creative usages.

A more important query seems to be the role desire plays in instigating technology use, especially when the user is coping with acute economic constraint. In the course of our research, we found subjects enthralled with the freedom and functionality afforded by the internet as wearable, palm-sized phenomena over what they actually did with it. It is one thing to say that getting acess to mobile internet empowered teenagers to carry out tasks that earlier needed a broker (e.g., audio-visual files and games bought from a shop). It's another to say the mobile internet was coveted as an ICT artifact irrespective of what or how it empowers teenagers. Many expressed sensing a "thrill, a power" by being able to do what they could "only dream of." To quote Sikander, 17, a high school student who also works part-time

night shifts in a nearby BPO vending food, "...I couldn't believe when I began downloading a song as I was walking to work and it did download the way Omar showed me... ... I may probably spend more activating internet to fetch my songs and movies than get it from a shop or even free sometimes…" It is this high that teenagers admitted to feeling, while using and carrying the pocket internet, as driving their periodically obsessive use of it.

We might ask, given economic constraints and the desire to use technology at one's will and pleasure, will young users gravitate towards more functional/utilitarian use? Clearly, the youth of Hafeezpet are spending good money on needs that begs the use of the term functional or utilitarian. Indeed, they are happy to divert time and money that might be spent on 'developmental' usages to mobile video downloads! This nudges us to look for a more effective framing of the poor or marginal socio-technical ecology and engagements with ICTs. In Hafeezpet mobile phones have moved far beyond being 'talking drums' [12], allowing a new communicative order, a second life for devices, transference of skills and circulation of digital content. These patterns of use represent the choices people make about what is important to them and how they will use technology to meet those needs. One might be the desire to embrace digital lives as a way of escape/expression/imprint through multiple means of engagement with internet technology. Another could simply be the sense of empowerment a self-managed ICT device gives in the digital era. A third can be the aspirational desire to participate in new opportunities liberalization of the telecom industry is affording.

6. CONCLUSION

We have seen low income youth take enthusiastically to the mobile internet. This paper has sought to explain some of the underlying motivations in this uptake, motivations beyond the utilitarian or functional.

Our study is an anthropological exploration of the interactional spaces of youth and the internet in an urban slum. While doing this we suggest that such an inquiry is valuable for the ICTD research community. The key here is for ICTD discourse to situate insights from anthropological studies within an understanding of what drives a specific user population to adopt technologies in specific ways: even if the latter is restricted to the realm of entertainment. Another important question: are the behaviours we observe due to the combined outcomes of a context of constraint and the desire for entertainment? Clearly there is a link between context and use and unraveling these can only support development research. Adopting a narrow development lens can miss the actual engagements and ingenious strategies marginal populations use to instate technologies into their everyday. Here, seeking entertainment becomes a key behavioral tool to strategize technology use. Indeed, this may require us to broaden our view of how we think about what underlies a good ICTD research project and how we view a range of human behaviors as incremental to development. Rather than using the internet to search for educational material, the youth in our study search for music and Bollywood teasers. These are hardly developmental in any conventional sense, but more akin to behaviours of youth in any part of the globe!

We set out to understand the intriguing uptake of the mobile internet by a user population least likely to afford and access this technology. We discovered entertainment as a critical area of technology infusion and wanted to explore what lay in these paths of access and use. We are now lead to view entertainment practices as: 1) Leading to discovering new skills and abilities; 2) Offering a space to experiment with technology; and 3) Leading

to valuable social effects of binding people and creating an informal technology hub. This study presents a story about crafting the internet anchored in a low cost but ubiquitous access channel in the developing world. As mobile internet technologies move beyond urban areas and the upper class who can afford them, it will be critical to see how the use of these transforms to include a spectrum of behaviors. No doubt what begins as entertainment can lead to more serious activities. Hence, the need to re-examine the stubborn positioning of entertainment and development related activity at opposing ends of the ICTD spectrum.

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