Asking Internet Users to Explain Non-Use in Kyrgyzstan

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Abstract

Explanations for slow adoption of the Internet in developing countries tend to break down when examining specific populations or fall into overly broad commentary that doesn't really allow for meaningful interpretation. In Central Asia, and specifically Kyrgyzstan, Internet adoption seems to be tapering off well below saturation levels. Survey data helps to explain why this is happening, but offers too much of a bird's eye view to really understand what using and not using the Internet means. In depth interviews with Internet users give a clearer picture of how to define Internet use in Kyrgyzstan, and why some people are adopting ICTs and why others aren't. Keywords: ICT use, Internet growth, perceptions

Introduction

When information and communication technologies (ICT) like the Internet were new, many people in the West expected these technologies to solve poverty-related problems if people worldwide could just get access [1,2]. Digital divide arguments often assumed that "if you build it, they will come": *i.e.,* if people can access the Internet, they will, and their usage patterns will be similar to those of users in Western nations. This generally resulted in initiatives to make access cheaper, more widely available across geographies, or to create local content. However, in many regions of the world, these assumptions did not prove true; despite increased availability, decreased cost, and more local content. Internet growth in many places is relatively flat and usage patterns differ, particularly in frequency and location of access.

Recent literature claims that the reasons for slow Internet growth and infrequent Internet usage include high cost, age, education level, gender-related restrictions, and language barriers [3]. However, these reasons are unlikely to be the only factors influencing Internet usage. A richer, more nuanced understanding of the patterns of and barriers to Internet usage is needed to inform any number of applications such as education, job training, ICT design, ICT for development (ICTD), and other efforts, allowing these efforts to be guided by actual usage and perceptions of people in developing and transitioning nations.

Understanding ICT usage and perceptions in developing and transitioning regions is also relevant to communication professionals. Usability engineers, for example, should understand how differences in cultural norms and ICT usage may affect not only the usability of a particular design but even the appropriate testing methods to explore usability [4]. Differences in the way people use ICTs also has links to the issues of information design, cross-cultural communication, information security, and information quality [5]. However, communication professionals rarely have a rich, nuanced picture of how and why people in particular regions use ICTs, as well as their perceptions of its value and intended purpose.

To begin to address this gap, we conducted a longitudinal study in Central Asia to explore information and communication technology (ICT) adoption and adaptation patterns. Specifically, we investigated the reasons for Internet usage and non-usage, using Central Asia as an example of a region with relatively flat Internet growth.

However, the very research question of what factors influence non-adoption makes the investigation problematic. Asking a non-user 'why don't you use the Internet' provides only surface explanations. Those of us working in the field for some time have heard the same litany of explanations: the Internet is too expensive, it is too difficult to access, there is nothing interesting to me online. However, these are people who have never used the Internet, and they do not have the experience with the technology to comment meaningfully on what the technology may or may not contribute to their lives in terms of actual importance. Therefore, for this study we chose to interview people who **do** use the Internet, specifically because people are often introduced to new ideas or technologies through their social network. We interviewed users not just about their usage patterns, but also to develop an understanding of how users perceive of and discuss the Internet and its utility in their community – including who among their social network is a likely user, and which members of that social network comprise

a population that is perceived to have no real use for the Internet.

In this paper, we address the following research questions: Are commonly cited barriers to Internet growth (language, cost, accessibility) truly barriers? What other factors might contribute to slow growth? What are some Internet usage and perception patterns in a region with slow growth, and what are the implications of our findings (*i.e.*, this richer picture of the reasons for slow Internet growth) for development, education, ICT design, and other applications? This paper is also part of an effort to develop a more nuanced understanding of how to define an Internet user. Worldwide statistics of Internet users, for example, categorize people who log on once a month or less alongside people who log on everyday and for hours of each day. We would argue that those two users are experiencing what is functionally a different technology in terms of its effect on their lives and communities, and our inability to generate a meaningful vocabulary to differentiate such users hampers our understanding of the cultural effect of the Internet and our consequent ability to respond appropriately in a design context.

In the sections following, this paper presents relevant background information about Kyrgyzstan as a transitioning nation and an overview of ICT usage at the national level. This background information provides a foundation for the more specific survey and interview data that follows. The survey involved 1,000 respondents representing a broad spectrum of the general public in Kyrgyzstan, identifying patterns in ICT usage, as well as other factors. The interviews were conducted with 21 Internet users in Bishkek, Kyrgyzstan, focusing on their usage and perceptions of the Internet. This interview data provides a richer and more detailed picture of what it means to be an Internet user and what types of people do and should use the Internet. The final section of this paper suggests areas of future research to further develop a deep understanding of the reasons that contribute to slow Internet growth.

Background

This section provides an overview of ICT usage in Kyrgyzstan at the national level to provide a foundational understanding of the proportion of technology users to the rest of the national population.

ICT usage in Kyrgyzstan is significantly less prevalent than most Western nations. For example, worldwide Internet penetration was 22 percent as of June 2008, with the United States at 74 percent, Germany at 64 percent, and the United Kingdom at 69 percent. Kyrgyzstan's Internet penetration is 14 percent [6]. Table 1 shows that although Internet use grew faster in Kyrgyzstan than in the U.S. from 2002-2007 as measured by compound annual growth rate, the number and percentage of users in

Kyrgyzstan remains quite small. Thus, even with a significant growth rate, the usage penetration in Kyrgyzstan is less than a fifth of that in the U.S. More importantly, these statistics indicate only number of users—not factors such as frequency or location of use, which provide a much deeper understanding of what Internet use entails within a given context.

Table 1. Internet Subscribers and Users in Kyrgyzstan and the U.S., 2002 and 2007*

	Kyrgyzstan	*U.S.*
Internet subscribers, total in 2002	4,600	56,992,800
Internet subscribers, per 100 inhab. in 2002	0.09	19.86
Internet subscribers, total in 2007	22,500	72,721,000
Internet subscribers, per 100 inhab. in 2007	0.42	23.78
Internet users, total in 2002	152,000	159,000,000
Internet users, per 100 inhab. in 2002	2.99	54.86
Internet users, total in 2007	750,000	220,000,000
Internet users, per 100 inhab. in 2007	14.11	71.94
CAGR, 2002-2007	36.39%	5.59%

The ICT landscape is, of course, made up of more than just Internet use. The worldwide penetration of mobile phones is more than twice that of the Internet, with more than 3.3 billion mobile phones in use worldwide, [6]. In fact, mobile penetration in the European Union reached 103 percent in 2007, signifying more mobile phones than there were citizens [7]. Even more relevant to Kyrgyzstan is the fact that at least 77 percent of the world's population lives in range of mobile signals and more than half (at least 58 percent) of the world's mobile subscribers live in developing regions [8,9]. The number of mobile phone subscribers in Kyrgyzstan and the U.S. in 2002 and 2007 are shown in Table 2 in total numbers of people as well as percentage of population. Similar to Internet usage, Kyrgyzstan's compound annual growth rate exceeds that of the U.S., but unlike Internet usage, mobile phone subscription growth is significant in terms of the percentage of national population: growing from slightly more than 1 percent to more than 40 percent in five years.

Table 2. Mobile Phone Subscribers in Kyrgyzstan and the U.S., 2002 and 2007*

	Kyrgyzstan	*U. S.*
Mobile Phone Subscribers, total in 2002	53,100	141,800,000
Mobile Phone Subscribers, per 100 inhab. in 2002	1.04	48.93
Mobile Phone Subscribers, total in 2007	2,151,700	255,395,600
Mobile Phone Subscribers, per 100 inhab. in 2007	40.47	83.51
CAGR 2002-07	109.7%	12.5%

This disparity in mobile versus Internet usage makes sense in light of the limited Internet coverage in Kyrgyzstan. There are three major ISPs in Kyrgyzstan: Elcat, AsiaInfo, and Kyrgyz Telecom. Elcat and AsiaInfo are available only in Bishkek, and Kyrgyz Telecom is nationwide: *i.e.*, wherever Internet is available outside of Bishkek, it is offered by Kyrgyz Telecom. The telephone infrastructure is offered through Kyrgyz Telecom, and where the landline quality is high enough to permit it, dial up is available and in some areas DSL. There are 500 villages throughout Kyrgyzstan with no Internet access available. High speed Internet access in Bishkek for a private home is approximately $33 USD per month for one GB of traffic; additional traffic costs more.

The next section describes the methodology for this study, specifically describing the 1,000-respondent survey from 2006-2008 and the interviews with twenty-one Internet users in 2009.

Methods

The Central Asia Information and Communication Technology (CAICT) project is a five-year longitudinal study of ICT use in four Central Asian nations: Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan. CAICT research includes broad social surveys, interviews, ethnographic observation, policy monitoring, web archiving, focus groups, and design ethnography. The project focuses on investigating ICT adoption and adaptation patterns in order to inform design efforts. The data in this paper comes primarily from two sources: a 1,000-respondent survey conducted in Kyrgyzstan in 2006, 2007, 2008 and domain-specific interviews conducted with twenty-one self-described Internet users in Bishkek, Kyrgyzstan, in March 2009.

Survey

This section describes the respondents who were interviewed for the surveys, details on the design of the survey instrument, and the procedures used to choose the sample and analyze the data.

The survey sample included 1,000 respondents, age 15 and older, from Kyrgyzstan. The survey was administered in January-March 2006, April 2007, and July-August 2008 in urban and rural areas from several regions of each country; the sample was based on census information on age, gender, ethnicity, and geographic location released by the government of each country.

The survey instrument was designed by a team of researchers from the University of Washington in Seattle, Washington, USA. The survey is part of a multi-year, multi-phase project on patterns of ICT adoption and adaptation in Central Asia. Given the low rate of current Internet penetration in Central Asia, the survey also focuses on pre-existing patterns of information use, information seeking behavior, and levels of trust in various producers and sources of information.

The survey, containing over 300 variables, was administered by the BRiF Research Group located in Kazakhstan. BRiF Research Group was responsible for translation of the survey instrument from English into Russian and other local languages such as Uzbek and Kyrgyz. The University of Washington team back translated the completed Russian translation.

Households were selected by a random walk procedure; only one respondent was surveyed in each selected household. Each respondent was chosen using the Kish grid method, a common technique to assure a random selection of household members. All surveys were conducted face to face; no other household member was present in the room at the time. Additionally, strict confidentiality was guaranteed to the respondents. The average length of the survey was approximately 45 minutes. Several steps were taken to guarantee high quality fieldwork including: (1) approximately 30 percent of surveys were checked through a back visit to the respondent's home; (2) researchers were trained through workshops, and they practiced in a pre-testing phase; and (3) statistical analysis of logical inconsistencies were double checked with the original paper questionnaires and eliminated if necessary.

Interviews

Twenty-one Internet users were interviewed in Bishkek, Kyrgyzstan, in March 2009 by members of the CAICT team from the University of Washington, with interpretation by a graduate student from Bishkek. The semi-structured interviews ranged from 20-50 minutes, based on interviewees' availability and loquacity. Recruitment was based primarily on convenience

sampling in public locations, as well as snowball sampling through local contacts in Bishkek. A variety of locations were chosen for convenience sampling, ranging from Internet cafes, to parks and markets in an attempt to reach a diversity of participants across class and educational boundaries. Inclusion criteria included living in Kyrgzstan and using the Internet, at least occasionally. Interviews focused on how people use the Internet and their perceptions of who *does* and *should* use the Internet.

The interview sample was gender balanced (eleven male and ten female) and varied in age, with the youngest interviewee 17 years old and the oldest 54 years old; the average age was 28. Most interviewees were ethnic Kyrgyz (17); three were ethnically Russian, and one Tatar. One-third of the interviewees were currently students, and the others had completed some form of higher education. Most interviewees lived in Bishkek (17) though twelve interviewees were originally from outside of Bishkek. In Bishkek, the capital, ethnicity is not tied to language use; that is, even though many of our respondents were ethnically Kyrgyz, their primary language was Russian.

Although Kyrgyz is the predominantly spoken language in many rural areas of Kyrgyzstan, Russian is the predominant language in Bishkek, and all interviewees spoke Russian fluently. Seventeen interviewees also spoke at least some Kyrgyz, and 16 spoke at least some English. Other languages were far less prevalent but included Turkish, Uzbek, German, and Spanish. Despite the prevalence of English, there was a wide range of competencies in interviewees' abilities to understand and respond to interview questions in English, and therefore, most interviews were conducted in Russian or a mix of English and Russian. Though our interviews were conducted solely in Bishkek, an urban area, interviewees were able to reflect on both an urban and rural perspective, either having lived in rural areas or offering stories of relatives in rural areas.

Findings and Discussion

This section presents findings from the survey and interview data and explores the implications of findings for ICTD efforts.

Defining Use

What it means to be an Internet user is different in different populations. In order to transfer knowledge about Internet adoption across regions, countries, or cities, it is important to understand how a typical user of the Internet is similar to or different from other kinds of users. In the United States, for example, it's common for casual Internet users to log in everyday, while several of our interview respondents who use the Internet two or three times per week, are self-described "frequent users." To help define use in Kyrgyzstan, we'll examine how

often users go online, where they go to get online, and what kinds of things they do when they get online.

Of our 21 interview respondents, eight indicated that they use the Internet every day or almost every day, and three more said that they use the Internet every working day. Other responses varied from two or three times a week to once a month. The three users who indicated that they only go online during work days all use the Internet primarily for work; only one indicated that she occasionally accesses the Internet for personal use.

Where users go to access the Internet also varied; most interview respondents go online from a combination of places. One respondent who has Internet access at work told us that she goes to Internet cafés because they have a faster and more reliable connection than at her work. Our youngest interviewee (17 years) had Internet access in his home, but he told us that he prefers to go to Internet cafés because it's more fun to go online with friends around. Our student interviewees were statistically more likely to be Internet users, but they tended to access the Internet more often from Internet cafés, usually because the public terminals at school were often unavailable.

All but one of the Internet users we interviewed uses the Internet for personal use, and all but three use the Internet for school, work, or both; leaving 17 of our interviewees who use the Internet for both personal and work or school needs. All of our interview respondents use the Internet both for communication, either through email or a social networking site, and for information seeking. Five of our interviewees said they use the Internet for dating, and three interviewees have purchased an item online.

When asked about the proportion of time spent posting or writing online to time spent reading or seeking information online, unsurprisingly, all interview respondents indicated that they spend more time reading than posting, at about 80% reading to 20% posting, although one respondent told us that he only reads online, and doesn't post or write online at all.

Although there are many other ways of defining what it means to be an Internet user, the importance of identifying what Internet use means to a population becomes clear very quickly. Our survey reports 44% of the population of Bishkek, the capital of Kyrgyzstan, are regular Internet users, suggesting that our interview respondent pool represents a relatively advanced group of technology consumers in Kyrgyzstan. However, variations across populations in behaviors that define use can confound attempts to transfer findings.

For example, only 11 of the Internet users in our interviews use the Internet five times a week or more, a little more than half. This may be due to the fact that home Internet access has a bandwidth cap, and Internet cafés charge by the hour, effectively forcing users who access the Internet from home or cafés to be purposeful and prudent in their use. In other countries where

unlimited bandwidth is available, similar users may be more likely to use the Internet every day, and for longer periods of time than users in Kyrgyzstan.

And while the relatively high cost of Internet access is certainly a prohibiting factor to access, our 2008 survey data indicate that only 1% of Kyrgyz non-users say that cost is a preventative factor towards gaining Internet access. Two of our interviewees indicated that they prefer to use the Internet at more expensive cafés, either because the connection is better there, or to experience the Internet in a social setting with friends. The two leading causes for non-use in Kyrgyzstan are related to access, but a close third is simply a lack of interest in the Internet, at 31%.

Our interview respondents overwhelmingly used the Internet for school and work in addition to personal use, suggesting that Internet use for school and work may help to break down barriers to other Internet use. Several interviewees told stories about first using the Internet at work to email or find information, and then transitioning to email and information seeking for personal use.

Who Does and Doesn't Use the Internet

We asked interview respondents to tell us about people in general who don't use the Internet, people that they know who don't use the Internet, and what they are like. Despite evidence that Internet users are a minority in Bishkek (44%), many interview respondents had difficulty thinking of a specific person they knew that didn't use the Internet. Some respondents couldn't think of anyone at all.

We also asked respondents to tell us about people in general who do use the Internet, and people that they knew who do use the Internet, and all respondents were able to think of a specific person, and often several people, in their social/familial network who also are Internet users. Two-thirds of our interviewees also remembered introducing the Internet to a non-user in their network, predominantly people in their families (6), followed by friends (4) and classmates/coworkers (4). Reasons for encouraging a friend or family member to use the internet were usually related to a specific perceived benefit of Internet access to the non-user.

These findings indicate that Internet users are more likely to know other Internet users, since interviewees often encouraged friends and family to try using the Internet. Also, non-users who don't have people in their networks who use the Internet may be less likely to become Internet users without additional motivation. The influence of social and familial networks on the likelihood of Internet use is an important cultural observation that echoes the findings of other studies in the region, but may or may not be relevant in studies of Internet growth in other regions [10].

When describing Internet users in Kyrgyzstan, only four respondents did not indicate age as a predictor of Internet use, specifically that "young people" use the Internet. What varied among the remaining respondents was the range of ages they considered to be young. For example, a 19 year old interviewee said that only teenagers really use the Internet, that some older people who need it for work also use it, while a 29 year old interviewee told us that people under 30 typically use the Internet; older people may also use it if they need it for work. Even our 48 year old respondent indicated that people her age and younger are typical users, but that older folks won't find much use in it.

This trend is fairly consistent across all interviewee responses; "typical Internet users are my age and younger, and people older than me may use it if they need it for some other reason." While it is noteworthy that a strong perception exists of the Internet as a tool for younger people, it is also important to note that the perception of what age is appropriate for Internet use is elastic among Internet users. This finding both supports and confounds the idea that age is an indicator of Internet usage. Certainly the Internet may be more popular among younger users in Kyrgyzstan, but what the cut-off age is depends greatly on the person you ask.

Several survey respondents also cited a lack of computer skills as a barrier to Internet access. Friends and family members of respondents who grew up without computers often don't attempt to gain computer literacy later on in life, perhaps contributing to the perception that older Kyrgyz are less likely to go online. One respondent explained: "People in my country are shy about learning new things, and computers are difficult to learn, scary even."

Family members who lack computer literacy often ask our interview respondents for help with the Internet. One 23 year old respondent told us, "Even my grandma asks me to find information for her, but she can't use it herself because her eyes are bad." Almost all of our interview respondents mentioned some instance of helping a non-user, usually a family member, find information or email distant relatives. This collaborative approach to Internet use may be partially due to the large number of non-users in Kyrgyzstan, but can also be attributed to a general culture of collaboration found in Central Asia.

Conclusions

The definition of Internet use in Kyrgyzstan is roughly characterized by a lack of the daily, habitual use found in other countries, particularly countries where access is not limited by bandwidth. A more nuanced definition of use requires consideration of many factors: where the Internet is used, why the Internet is used, even how users learned how to use the Internet.

Learning about people who don't use the Internet can be difficult. How can a non-user articulate why they don't use it? Does the non-user have an accurate perception of

its function and value? Asking Internet users about non-users can be a useful way to gain information not only about perceptions of the Internet, but also about perceptions of Internet users and non-users.

Our study was designed to deepen our understanding of Internet use and adoption in Central Asia, but Central Asia is not the only region that is showing weak Internet growth. If future research could begin to tell the specific stories of Internet growth in other regions, including those of Western countries, we may achieve a broad, as well as deep understanding of how Internet use and perception varies around the world.

Acknowledgements

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