

# Building More Effective Internet Freedom Tools: Needfinding with the Tibetan Exile Community

Michael Brennan\*, Katey Metzroth, and Roxann Stafford

SecondMuse,  
1002 Paseo de la Cuma, NM, USA  
{michael.brennan,katey.metzroth,roxann.stafford}@secondmuse.com

**Abstract.** Over the past several months a team of computer scientists and ethnographic researchers created and applied to apply a human-centered design approach to understanding the needs of the Tibetan exile community related to safe and secure communication practices, particularly on the Internet. This process included a two week visit to Dharamsala, India in March 2014. What our process allowed us to discover are not only the top-level needs that will directly affect development of privacy enhancing technologies, but a deep understanding of reasons behind the needs which we hope will support greater impact of these findings. We learned about the communication norms, security and privacy related behaviors, perceptions of surveillance, software usability considerations, and more. This paper reviews our process, our research questions, and our learnings. It will also outline elements of a research framework that can be used by developers and researchers to further serve the Tibetan community and other communities that face threats to free and safe access to communication on the Internet. This work is in progress, and this paper reflects that. We note throughout this paper where research findings are preliminary and incomplete. We aim to have a full draft of our framework and our findings complete in time for HotPETS. *abstract* environment.

**Keywords:** Internet Freedom, Ethnography, Human Centered Design

## 1 Introduction

Internet Freedom Tools (IFTs) are developed to solve the technical challenges of privacy, security and information access. Focusing on these technical challenges rather than the user of an IFT can lead to overlooking the motivations, needs and usability issues faced by user communities. Further, IFTs may solve a technical challenge for users, and yet fall short when it comes to user experience. There is a disconnect that must be remedied for IFTs and the people who use them to realize their full potential.

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Our work seeks to provide new insights to developers, users and funders in need of knowledge on how they can better address relevant problems, create appropriate solutions and help users with IFTs. We will accomplish these goals by developing a framework to guide the development of IFTs that is grounded in ethnographic methods and human-centered design, and utilizing this framework to deeply understand IFT needs in the Tibetan Exile community in Dharamsala, India.

Our objectives are to:

- Find more intersections for developers, users, funders to work together to make more robust tools
- Increase the ability of developers to assess the needs of users and integrate those needs into the development process
- Create a framework that can be used by developers to better understand the needs of users and design to address those needs.

Before continuing, it is first helpful to review a couple of key terms that are used extensively throughout this work.

*Ethnography* is defined as the study of culture and human motivation through qualitative research. Ethnographic practices complement usability studies by tapping into needs and motivations of people and users to give the "why" behind certain actions observed solely through conducting usability research. This method includes interviews, observing specific behaviors and understanding the material culture and surrounds of a target group.

For the purposes of this work a *community* is defined as a group of users that can be defined by geography, culture, shared experiences, or shared challenges. User is defined as someone who is currently utilizing a particular IFTs such as Tor, RedPhone, CryptoCat, and/or other privacy, security, anonymity and access enhancing technologies and methodologies created by developers or users themselves. A user may also be defined as a potential user of such technologies and tools.

This paper will review our approach and application of these objectives for the Tibetan Exile community in Dharamsala, India. First it will review our approach. Next it will review the research instruments and exercises created to perform this work. It will conclude by reviewing key findings based on our work with the Tibetan community.

## 2 Overview

Our approach is divided into three phases. The first phase of this work aimed to develop an understanding of the emerging landscape of the internet freedom space and tools and identify research questions that will aid in the creation of a development framework for the ITF community, specifically developers, to more effectively and efficiently develop contextually relevant tools in the future. We interviewed 21 people representing different types of stakeholders and attended an array of conferences, gatherings and workshops where we conducted focus

groups which included a variety of stakeholders such as developers, funders, trainers and activists to share our work to date and learn about their experiences in the space.

The full scope of our learnings is too large for this paper, but performing this analysis was essential for developing an effective research engagement in Dharamsala and even in choosing that location. They range from broad learnings about the space to specific learnings about user engagement when building IFTs. They taught us, for example, that developers themselves often feel lost when it comes to effectively engaging with users to understand their underlying needs. It taught us that some funders are skeptical of the value of IFTs among human rights activists in the field, largely due to usability concerns. And it taught us to look at usability in a much more holistic sense - that it should not just refer to how usable a tool is but how useful it is in the daily life of its user.

It is important to note that the choice to engage with the Tibetan community in Dharamsala was based on a few important factors. First, the community faced a clear threat model. Second, the community had sufficient diversity within the population of different users with different needs - such as journalists, activists, government officials, NGOs, and unique groups like communicators responsible for ushering information between Tibet and Dharamsala. Thirdly, the community is well known in the Internet Freedom space. And finally, the threat model, which focuses on a foreign government as an adversary, made it possible to perform our work on the ground with relative safety for both ourselves and the participants. All of these factors made it the best candidate for the first research trip of this kind in this field. Also note that participants appearing in any photo have given their consent to both take photos and publish them.

We embraced these learnings as we entered the second phase of our work, which was to deeply understand the context for the target community of Dharamsala, India, and the plan a two week engagement on the ground with the Tibetan exile community. It is not possible for most Internet Freedom Tool developers to spend months on end with potential users of a piece of software, understanding the nuanced needs that emerge from their daily lives and habits. This is where Human Centered Design comes in and provides value - it allows you to gain deep insights in relatively short period of time.

Through a variety of intentionally designed exercises and activities we were able to draw out the needs of the Tibetan exile community regarding IFTs. These are approaches that lend ourselves to get deeper quicker on the understanding - as opposed to doing traditional interviewing alone and staying in dharamsala for an extended period of time to draw out information through those means. We employed a range of techniques, some of which are outlined below. We would like to share an example of a learning we drew out to illustrate the value of employing this approach, and how we turned that learning into an important takeaway for developers.

Developers building mobile applications for the Tibetan community must build them for iOS in addition to any additional platforms.

On the surface this may appear to be a simple statement. It may also stir questions among developers as to why this platform is so necessary from the perspective of developing security tools. Particularly when many developers prefer the Android platform for secure mobile application development. What we learned was that, on the surface, the reasons iOS is so important in this context actually has nothing to do with security at all.

We spent a lot of time interviewing a broad range of groups from activists, to NGOs, to government officials, to communicators who are responsible for getting important sensitive information in and out of Tibet. Early on the issue of language emerged - the importance of developing tools in the Tibetan language. This seemed straightforward. But as we continued speaking to people we realized that the need was much deeper than that.

Many Tibetans we met embraced iPhones as their preferred mobile device. We witnessed people using their phones, telling us about their favorite apps, explaining how family and friends in Tibet used their phones, and expressing repeatedly that the iPhone was important to them. At first we thought this was largely due to the fact that the iPhone had native Tibetan language support, and Android phones do not. And while that is true, the full truth is even bigger. For a community whose culture and language is constantly under threat, it is more than just being able to utilize an operating system in their native language - it is that the iPhone can represent larger recognition of the struggle of the Tibetan people. It becomes a symbol of that movement. People will save up months of salary to purchase one, even in Tibet, because of what it symbolizes.

This is important because developers often prefer Android development. It has certain security properties that allow for easier secure app development. But in this context, we will likely argue that these additional security properties will never trump the cultural importance for the Tibetan people of what the iPhone represents. The answer? As far as we are concerned, developing tools for the Tibetan community means you have to also develop for iOS.

This is a coarse description that is leaving out nuance and depth, but it provides insight as to the value of this work and the learning that can come from it. We learned all of this because of the human-centered design approach we employed. People can only tell you so much, but the answers are out there. Our job was to create the environment so that those answers can comfortably surface. Through the analysis side of human-centered design we translate this understanding into what can a developer or specific stakeholder can do in response. This approach allows us to realize the problem solving creativity that is within a population. We enter a dialogue with them and every experience that we have helps shape the overall experience to get to those answers. We learn what people are trying to do and solve for, and we analyze how that translates into action for developers and other stakeholders.

Our third and final phase is the one in which we are currently operating: analysis and synthesis. Due to the early and incomplete nature of our analysis, the remainder of this paper will only detail the specific take-aways from our time in Dharamsala. It will not provide an a depth of understanding to the nuances

of the point or the means we undertook to understanding it. We look forward to expanding upon the most salient points in more detail in future publications, but hope that the high level analysis in this document provides a meaningful introduction to this work.

## 2.1 Research Questions

The research questions we develop are the key to all of our work. Based on our landscape analysis of the space, and interviews with individuals in preparation for our trip, we established a focus set of research questions to drive our engagement with the Tibetan exile community. The purpose of these questions is to guide the design and execution of our ethnographic research on the ground in Dharamsala. These questions are used as a lens through which all of our work was viewed.

For example, it is through these questions that we designed three visual exercises that we could use when meeting with people in their homes or workplaces. These exercises ended up focusing on understanding communication habits, understanding perceptions of security, and identifying design elements for highly used tools.

Our final set of guiding research questions were as follows:

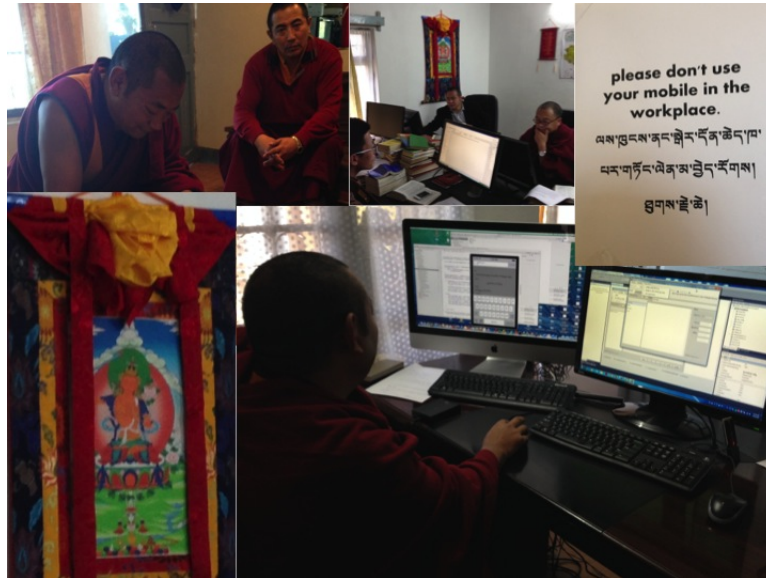
- What is meaningful communication?
  - What are the most common use cases of communication technology in which security/privacy may be a concern?
  - What are the priorities for an individual when they are communicating?
  - How do individuals in Dharamsala define privacy and security?
- What differences are there in needs and the uses of tools, based on spectrum of technical literacy, mission, profession, and other points on the spectrum. What are the differences in the needs and uses of tools based on these points?
- Do individuals utilize Internet Freedom tools? Why or why not?
- What are the security-related behaviors that individuals employ in their daily communication activities? How are these reflected (or not reflected) in the technology they choose to use?
- What are the things a user considers when making a security-related decision online? How might these considerations translate into more usable software?
- What are the most relevant pieces of info that would help a developer build a tool more effectively for people in Dharamsala?

## 2.2 Research Instruments

In order to perform this research we adapted a variety of ethnographic and human-centered design techniques for use in this specific context. This section offers brief descriptions of a number of those instruments. Full examples and guides for creating these instruments will be available in the near future.

*Formal Interview* - Sets of questions to ask in formal interview settings intended for 30-60 minutes discussions or more. Example questions include:

- How do you communicate with people? What are you sharing?
- Do you use, or have you ever used, software that was intended to help manage your privacy or security online? Tell us about it.
- What does safe communication on the Internet mean to you? To your organization/community?



**Fig. 1.** Spending time interviewing Monlam IT, an IT organization run by monks.

*Intercepts* - A set of additional questions to ask in informal settings, or during shadow activities. These questions are complementary and may be a subset of the interview questions. Example questions include:

- Have you ever tried to use a new app or software that is meant to help you communicate with others and given up on it? Why did you stop using it?
- How often do you think about privacy and/or security when using the Internet? Who or what comes to mind?
- Do you use WeChat? Are you concerned about anyone being able to see what you communicate on WeChat?

*Shadow Activity* - A guide for performing a shadowing activity, observing and studying important security-related activities of key stakeholders in the community. This includes observing and recording people for a full or half day, from when they prepare themselves in the morning to when they wrap up in the evening, recording their experiences along the way.



**Fig. 2.** Shadowing with Voice of Tibet.

*Co-Design Group Activity* - A one to four hour-long session in a comfortable environment with a group of approximately six people from the target community with a similar background (e.g. organizers, reporters, students), divided into smaller groups to co-create ideal solutions for their scenarios.

*Visual Exercises* - These are a set of exercises that allow for needfinding through creative expression. Three exercises were included, each of which tackled a different aspect of the research questions. For each exercise, participants were asked to take time to draw a picture, diagram, or write text to answer the questions included in the exercise. Below are a few examples of some instructions from each exercise.

- Connectivity Exercise: “Who, what, how, do you stay in touch with family, friends, and colleagues? We are interested in learning more about how you and/or your organization communicates and shares ideas and specifically what do you use to do it.”
- Visualize Your Communication Safety: “How do you keep your communication safe/secure? We are interested in learning more about how you and/or your organization deals with challenges to your mission and risks to safe and secure communication.”
- Design Your Ideal Communication Tool: “Based on what topics come-up in the previous 2 exercises have participants design a new communication tool that would solve their needs. We also want as many people to know about your new tool. Create a print or commercial ad to spread the word. We’ll come back together to share them with the larger group.’



**Fig. 3.** Two monks participating in a co-design group activity.

### 3 Emerging Learnings

What follows is a simple overview of our emerging findings from our time in Dharamsala. Each list follows one of the key research questions we developed in advance of our visit, the sum total of which were intended to foster a deep understanding of broad communication, privacy, and security concepts within the community.

Please note, as mentioned earlier in this paper, that this is an initial and simple review of our findings. They are not organized for importance, need, or by any other factor. We look forward to having more contextualized analysis prior to any presentation at HotPETS.

*What are the use cases for communication technology by members of the Tibetan Exile Community?*

- To raise awareness of the Tibetan situation.
- To communicate with those living inside of Tibet
  - On topics of cultural, historical, religious, or political significance and current events.
  - On topics of personal significance.
  - To receive news from inside Tibet related to the Tibetan movement [such as actions by the Chinese government and acts of protest].
- To coordinate between organizations in support of the Tibetan movement.
- Cultural preservation: language, history, religion, identity.





**Fig. 4.** Participating in the design visual exercise.

- Sharing information and media of cultural or religious significance, such as teaching and images particularly around faith and culture and His Holiness the Dali Lama.
- In-person communication with those who have come from Tibet to exile.

*What are the priorities for an individual when they are using communication technology?*

- Information reaches its intended target
- Information reaches its destination in the form that it was sent.
- To not put the person they are communicating with at risk or harm.
- The senders identity is known and trusted.
- The source of information can be verified.
- Communication is efficient, responsive, and in real time.

Given the length of this analysis and the fact that this work is still in progress, the remainder of the research question will include 3 example take-away points for each one.

*How do individuals in Dharamsala define privacy and security?*

- Being notified that people are trying to break in and cant.
- Verifying that info has come from who you think it has.
- Choice in who sees my information and how it is used.

*What differences are there in needs and the uses of tools, based on spectrum of technical literacy, mission, profession, and other points on the spectrum. What are the differences in the needs and uses of tools based on these points?*

- Need for Tibetan-ness that represents symbols (language, images) that resonate culturally with Tibetans.
- Need for simplicity, ability for tools to be operated by those without high education.
- Need for native Tibetan language support, for those who cannot speak English, Chinese or other languages.

*Do individuals utilize Internet Freedom tools? Why or why not?*

- Many reasons were cited for not using many commonly known IFTs.
  - Tools were not appropriate for environmental conditions, such as Internet interruption.
  - Tools were too complicated; people don't perceive themselves as having technical know-how to use the tools.
  - Tools had a barrier to working the first use, and no attempt was made to try again.
  - Incompatibility: language, operating system and other technical requirements, literacy.
  - Unavailability due to censorship.
- Security tools as defined by the community that are most commonly used are easy to use apps and internet applications such as: Gmail two-factor authentication, Skype, Google Drive, and Dropbox.
- People are adapting what are not traditionally intended use of security tools to address their security needs: i.e. verification of attachments via phone calls and Viber chat groups to confirm information.

*What are the security-related behaviors that individuals employ in their daily communication activities? How are these reflected (or not reflected) in the technology they choose to use?*

- A preference towards meeting in person when possible.
- People are using physical security methods: multiple phones, removing battery, keeping computers with them, storage of information on disconnected devices, using servers outside India and China.
- Small behavior changes of anonymity, such as people don't share their names or don't want to know background info.

*What are the things a user considers when making a security-related decision online? How might these considerations translate into more usable software?*

- “Does work with my technical constraints?” - Developers must understand what people are using, specifically device-wise, before building a tool.

- “Is it even worth it trying to protect myself?” - Users get frustrated attempting to get tools to work, and can feel it is hopeless if they do not do everything right. Developers and trainers can take a risk-mitigation point of view to develop more usable software (as opposed to an absolutist point of view in terms of security).
- “Is it worth taking the time to try this new tool?” - Do not release a tool until it is ready to be used in the context of the users in Dharamsala, and can handle the technical and cultural constraints. Make a grand first impression.

*What are the most relevant pieces of info that would help a developer build a tool more effectively for people in Dharamsala?*

- Cultural relevance is very important, using appropriate images and colors.
- Limited connectivity is a major challenge, and tools should be easy to use under challenging connectivity conditions.
- Design for real behaviors not just aspirational ones - people are using and will continue to use insecure tools such as WeChat. Make it as easy as possible for them to start adapting their behavior to another technology.

## 4 Conclusion

This work in progress represents a unique application of human centered design and ethnographic research to the space of Computer Science and privacy enhancing technologies. It describes the value of this process in identifying underlying needs for a community of Internet Freedom Tool users, and demonstrates how those needs can begin to be translated to actionable learnings for developers, funders, and researchers.

We invite the Privacy Enhancing Technologies research community to share their own opinions about this work in order to help us find the application of human centered design that is most useful to you.