

Preserving Craft Heritage by Forging Rural-Urban Connections

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Abstract

This study aims to explore the difficulties of preserving cultural heritage in rural areas and to inform better designs of computer systems to support such preservation. In this case study, we observed and documented craft cultures in three rural villages in China. Our methods include photo-ethnography, interview and observation. From analyzing various types of data, we were able to identify issues of cultural heritage preservation, including cultural identity and values. We propose a conceptual system design for an installation and software connecting rural craftspeople and people who appreciate crafts, as a means of fostering a mutual relationship of support and appreciation. We believe this relationship can help preserve cultural heritage in rural areas. Some of the system installation elements were prototyped in scale models. The paper's primary contribution is the design field research, analysis of design field research, and conceptualization.

Keywords: Traditional craft, Interaction design, Design research, Cultural heritage, Tangible interaction.

This case study focuses on the preservation of rural culture and heritage, which is an important research topic in Information and Communications Technologies for Development (ICTD). We were interested in what roles technologies play in the life of rural craft people, particularly in building cultural identities and confidence. Our ultimate goal is to explore how we can use technology to foster heritage appreciation and preservation by focusing on craft makers in addition to people who appreciate crafts.

Literature Review

ICTD and Traditional Craft

Research and projects in ICTD are targeted to help developing areas and have achieved stunning influence in many ways (Tongia and Subrahmanian, 2006). Many ICTD projects have focused on issues about economic development, education, and health support (e.g. Ali et al., 2007, Perrier et al., 2015, and Vashistha et al., 2015). In parallel, researchers in Human-computer Interaction (HCI) have also targeted cultural identity issues and value manifest (Irani et al., 2010).

In many countries in Asia and Africa, handcrafting is an important tradition. These handcrafting traditions are important as components of cultural practice and heritage.

However, the survival of these handcraft traditions are sometimes at risk. One of the primary threats is globalization. One of the results of globalization is making everything available everywhere, which sometimes come with the side-effects of diminishing the value of unique, local heritage and practice.

Globalization changes people's attitudes in villages, especially apropos of local craft heritage values, because people in the village come to want the same things that are available and coveted in urban areas (Lu, 2003). In developing areas, inequalities between city life and village life often lead younger villagers to admire modern urban trends, while overlooking the value of cultural artifacts and practices in their local villages. As a result of these trends, the preservation of cultural heritage has become an important yet challenging issue for these developing countries and areas.

Heritage and Interaction Design

Using ICT to preserve cultural heritage has been an important agenda in the HCI community. Many interactive projects have been done to foster appreciation and understanding of cultural heritage. For instance, Petrelli et al. (2016) designed an interactive multi-sensory soundscape to create novel and provocative experiences of a heritage site. The historical site is the remains of the fortifications built during World War I. The soundscape allows visitors to listen to audio stories at narrative points while trekking at the historical site. The audio stories are composed by historical collections about the War, for example, official document and diaries of soldiers. Audio materials and physical landscape are connected by an interactive belt, using Bluetooth and NFC. The interactive belt was inspired by historical images of soldiers and has been designed to fit into the scene. The multisensory experience offers visitors deep understanding of the heritage and strong connection with the historical event the soundscape presented. Other examples include Ardito et al., (2010), Ciolfi and Petrelli, (2015), Griffin, (2010), Ibrahim, Ali, and Yatim, (2015), and Muntean et al., (2015).

The majority of HCI design studies often approach the issue of cultural heritage from the perspective of people who appreciate heritage. For example, Muntean et al. (2015) designed a tangible interface to explore intangible cultural heritage for museum visitors. *Belongings*, the interactive tabletop they designed, allow museum visitors to access information about the long history of a traditional activity and related knowledge of the ancient culture in exhibition. The interactive tabletop can detect physical replicas of cultural belongings and then provide additional digital information about the belongings. This technology allows visitors to connect physical cultural object with its intangible heritage value by just placing cultural object on the tabletop.

Only a few researchers have looked at this issue from the perspective of craftspeople. These few exceptions include Jacobs and Zoran's study (2015). Their study focused on a design collaboration between digital makers and traditional craftspeople to create crafts using digital tools. They organized a design workshop with local people in a community in Namibia. The design workshop came up with hybrid design of the local traditional craft by using CAD (computer-aided design) tools.

We believe digitalizing traditional objects and their intangible meanings is only one way of preserving culture. It could also be very valuable to use technologies to support the original crafting practice and keep craft's cultural value and quality. By doing this, the heritage can live and coexist with the modern society.

The purpose of this design research project is to better understand and design for cultural life and preservation of culture heritage in rural areas. We seek to make sense of how ICT can be used as a material of design for this context. In this study, we present a case study about a three-week long design research in rural villages in China concerning heritage practices. We developed interaction design concepts and prototypes that include the villagers' perspective in the design phase. In our work, we consider that understanding the local cultural context is crucial and that understanding the concerns of rural people is critical for ICTD projects to successfully address cultural issues.

Research Methods

To understand how the villagers conduct craft making activities and craft business, the lead author conducted design research for three weeks in three villages in the Yunnan province of China. All three chosen villages - Guandu (官渡), Sanwa Village (三瓦村), and Tengchong (腾冲) (Figure 1) are well known for their crafting heritage and are places in which craftspeople live, learn, and practice their crafts. During the field research, the lead author interviewed 10 craft makers in total, including 5 men and 5 women, visited 7 workshops or individual studios, and observed the public spaces in the three villages. The interviews were semi-structured. The structured part asked questions about the crafting process, how he/she become a craft maker, their crafting business, their relation with crafts' recipients, their thoughts on preserving crafting practice as a cultural heritage, as well as their personal feelings towards their business of making traditional crafts.





Figure 1. From top to bottom: Guandu, Sanwa, Tengchong.

Besides interviews, the lead author also conducted fly-on-the-wall observations for about 60 hours, in the studios (about 18 hours) and in the public spaces (about 42 hours). The observations are aimed to understand traditions and rituals in the village and how crafting practice is involved, the relation between people's everyday life and the craft practice, the business ecosystem of crafting, and technologies that used for crafting practice. Observations were recorded photographically without interrupting activities. Some people noticed the researcher taking photographs and some did not. No one objected and move over.

To better understand the life of the craftspeople, we synthesized all materials collected from the field work, including photographs, business flyers, as well as notes of interviews and conversations. We did not only emphasize the technological possibilities in designing for the craftspeople' life and work. Rather, we intended to present their lives as a whole. We were

interested in how their social life, space, activities, and tools intersect with one another. One reason for doing this is that we found it is impossible to interpret the use of technologies in cultural practices without discussing the other aspects of the craftspeople's lives. Another reason is that we believe only by viewing the space, practices, and tools as a whole, can we find a way to design technologies feasible for the rural people and their cultural practices.

Results

Public Space as a Social Hub for Exhibiting and Practicing Cultural Activities

At the community level, villagers seek to preserve craft and regard craft as a representation of cultural meanings. However, the differences in traditional craft practices lead to different living styles in different villages. In addition, how villagers conduct their crafting practice depends on the operation of the villages.

Guandu is a tourist spot. Traditional buildings and habitats are well preserved in this village. Social activities take place in public spaces – a park or a square, which include mainly traditional Chinese activities, such as singing Chinese opera and playing traditional music instruments. At Guandu, the crafting activities are organized by the unit of workshop. Workshops are independent from each other and have independent business and advertising channel.



Figure 2. People in the villages. Top left: the master is texting his client using an old phone in Guandu; Top right: Apprentices are working in the workshop in Guandu; Bottom left: villagers are playing ancient Chinese songs at the public space in Guandu; Bottom right: a teenager reading a book at the museum in Tengchong.

Sanwa is an ordinary village—in the sense that it is not a touristic place. It has been famous for embroidery for centuries. Unlike the other two villages, there is no public space for villagers to gather together. It is hard to see people engaging in craft making. Women were rather working at their home and making embroidery mainly for their families.

Tengchong is near the border of China and is well known for its traditional paper making. There, ancient life style and crafting practices are well preserved. Because of its uniqueness and the well preservation of the crafting heritage, a museum designed by a famous architect was built at the center of the village. The museum has attracted lots of attention inside and outside the country and is also a place for local people to socialize and discuss village issues, like the traditional paper business. The workshops at Tengchong are organized in family units—that is, each family has its own workshop.

Crafting as a Part of Living or Part of Culture

Crafting is deeply rooted in every aspect of the three villages, in terms of history, culture, economy and even mundane activities. Owing to these roots, the everyday activities of the village also strongly influence crafting practices. As such, these practices may be considered as intangible heritage.

Occupation versus Heritage Preservation

Among craftspeople, people have different understanding of what they are making. From the interviews, the young apprentices at Guandu took the crafting work as a normal job, while the masters considered the craft technique as heritage. The masters negotiate with local government to discuss the preservation of their crafts. For women in Sanwa, embroidery is just another job of theirs. Whether the craft is considered as commodity or heritage also influence craftspeople's working environment, as it affects their income and the respect they receive.

Crafts: Commercialized & Artist Heritage

All the handcrafts observed required very complex processes to produce, involving sophisticated skills and tools. At a bronze workshop in Guandu, one month was the minimal time to complete a single craft object according to one craftsman from the workshop.

Currently, there are two ways of viewing the crafts. One perspective considers craft as commercialized goods. For example, in Tengchong, some of the handcraft papers are used to create notebooks or other paper products and sold to stationery shops. The direct sales business model helps the craftspeople to earn a living and entails simplifying the making process in order to produce crafts more quickly. Another perspective regards craft as national heritage. In several workshops in Guandu, the craft traditions have been officially recognized as national heritage,

receiving government financial support for the preservation of the complex craft making processes. Crafts made in the traditional, complex way are naturally more expensive (Figure 3).



Figure 3. Left: embroidery in museum: The patterns are complex and the details require traditional, complex techniques. Right: embroidery in shop: An embroidery piece purchased from Sanwa. The patterns are simply flowers and plants which requires relatively less manual work.

Two Trade Models

From the observation and interviews in the villages, two trade models for traditional crafts can be identified (Figure 4). One is the Factory Model, as observed in Sanwa; another one is the Tourism Model, as observed in Guandu. Tengchong was observed to be in a process of changing from factory model to tourism model.

Factory Model

The factory model of craft leads to commodification of traditional crafts. Here, the production of crafts is profit-oriented. Craftspeople may regard themselves as workers who produce products, and associate little with their own cultural life and traditions. The importance of traditional cultural values embodied in the crafts may be diminished in this model.

Tourism Model

In the tourism model, crafts are considered as emblems of cultural heritage. In this model, the value of crafts comes from historic and cultural meanings. Since craft is integrated in local culture, local historical architecture and social activities are also integrated in the preservation of heritage. As observed, tourism helps to facilitate the exchange of values between villagers and outsiders.

No matter which model is used, there is a trend that younger generations have less and less interest in carrying on the heritage practice, as said by the curator of the museum, who is also the village head of the Tengchong village.

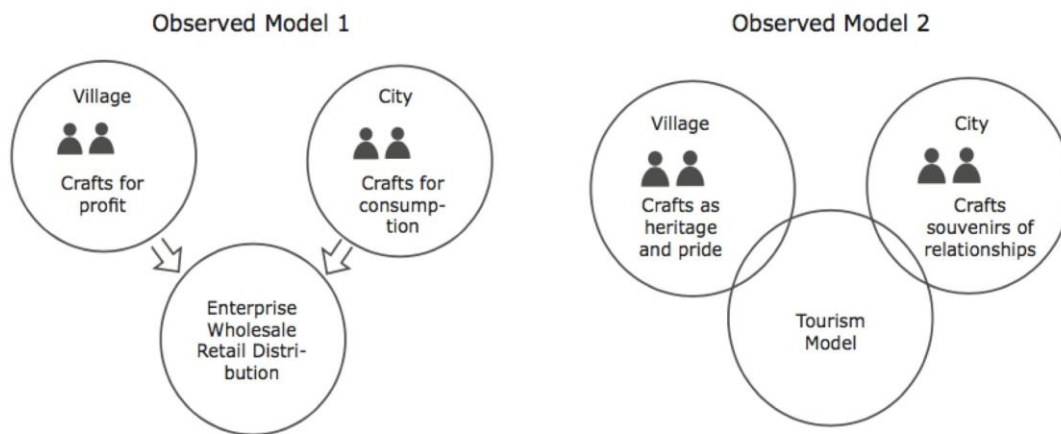


Figure 4. The two trade models. Left: factory model; Right: tourism model.

The Technology Embedded in the Crafting Life

Even in the most rural village of the three villages, technologies play some sort of a role in the whole process of traditional craft making and trading.

Technology as Making Tool

Tools—such as machines for drilling, sanding, sewing and so forth—are vital to the crafting process. Craftspeople rely on their skills and also on specialized tools. In contemporary society, technology has been integrated in the crafting process for a long time. The craft workshops visited all applied certain technologies to make crafting easier without diminishing the traditional ways of craftsmanship.

Technology as Communication Tool

The master craftspeople are the ones who keep contact with customers, government officers and other related people. The master craftspeople in Guandu and Tengchong all use cellphones for communications. Text messages were the main medium and none of them had a smartphone.

Technology as Advertising and Exhibition Tool

All the workshops visited have their own websites to exhibit the craft and the history of the craft, always created by people outside the villages. In the museum in Tengchong, a tablet was used to

display the making process of handcraft paper (Figure 5). The technologies acted as one-way medium and craftspeople have no knowledge about how to edit the content themselves. The tablet is used not differently than a video player and a television could have easily replaced it.



Figure 5. a tablet has been used in the paper museum.

In general, all the technologies observed in the three villages are very basic and easy to use. ICTs help people outside the villages to know the crafts but the villagers have limited skills to fully utilize them for making, communication or advertising.

Design Insight and Concept

Our observation in the villages yielded three findings. First, at the community level, villagers seek to preserve craft and regard it as a carrier of cultural meanings. Second, under the influence of globalization, people in economically disadvantaged villages need cultural confidence to appreciate their own culture and heritage. Third, while the tourism model is better than the factory model, there is still room to improve social connections between villagers and the urban appreciators for exchange, support, and preservation of culture. With all of these observations considered, our design focuses on bringing cultural confidence to the villagers, through augmentation of the tourism model (Figure 6).

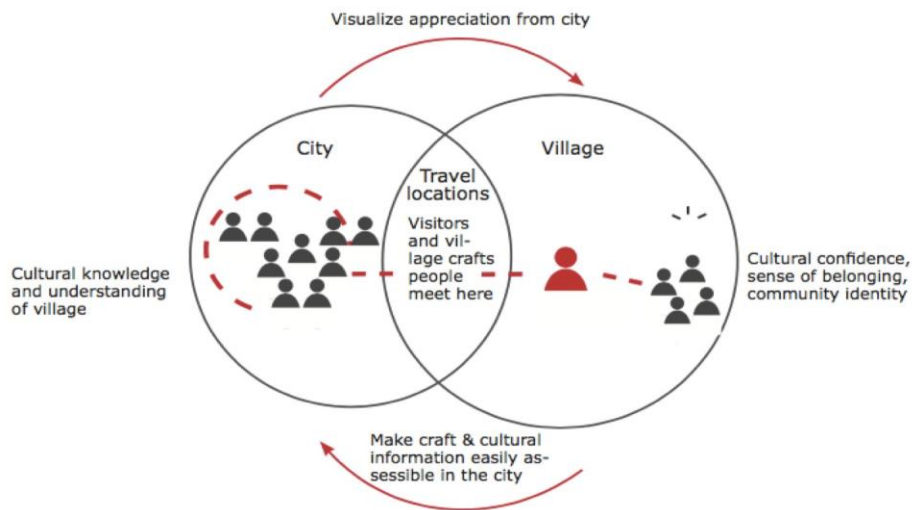


Figure 6. the proposed model: Socially Connected Model of Exchange, Support, and Preservation

To achieve this goal, our design seeks to connect villagers and urban visitors who appreciate the village crafts, not only for selling crafts, but just as importantly for sharing traditional culture. Making craftspeople aware that others appreciate their craft yields incentives for them to take pride in what they are doing and thus build their cultural confidence.

Our interaction design concept system has two parts. One part is an interactive display installed at the public space at a village. Through simple interactions with the display, a craftspeople can have an overview of the distribution of the crafts made by him or her and receive tokens of appreciations from other places. The second part is an online platform that allows urbanites who have visited the village to have access to detailed information about the kinds of crafts they are interested in and send out their appreciation (Figure 7).

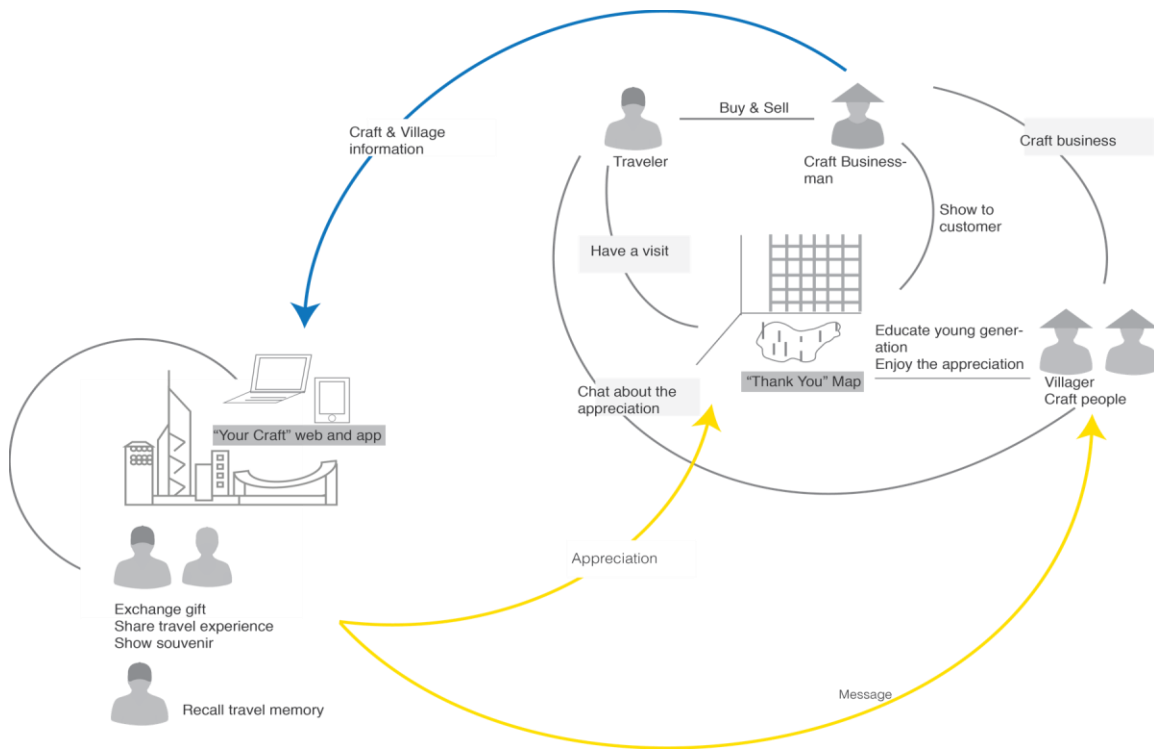


Figure 7. the concept system of the design.

Physical Installation in Public Space at Village

Our design rationales are the following:

Considering villagers are not familiar with digital technologies, the control and interactions with the design should be simple and straightforward.

Craftspeople invest long working hours in making. Each craft piece can be considered as a unique and valuable piece. We want to foster appreciation for each craft piece and deliver the appreciation to the person who made the craft.

From the field work, we found out that public space is important in villagers' lives. Public space is the place in which villagers participate and discuss public affairs, as well as enjoy group activities. It is also the place in which villagers discuss and make decisions about the village's craft business and how to preserve craft practice as national heritage.

Therefore, our design specifies an ambient, public display in the village that shows where that village's crafts are situated and being enjoyed once purchased by others. We call this the "Thank You Map." The display would be installed at the public space in the village. For example, it would be in the public museum if it is to be installed in Tengchong. Each family in

the village has a large square button—we call it the “cube”—on the vertical surface of the display. When a cube is pressed, lighted and colored cylindrical bars raise from the horizontal map display denoting where that family’s crafts are now located. The height of the bars denotes the quantity of that family’s crafts which have found their new home at the location. Touching any of the bars triggers recorded “thank you statements” from people who own that family’s crafts and reside in the particular location denoted by the bar (Figure 8).

We hope by interacting with this display, craftspeople could have a straightforward understanding of how widely their crafts are appreciated. This representation and understanding about the value of their crafts can help villagers build confidence in their culture and craft practices. Furthermore, it can encourage craftspeople to treat their work as a continuation of a rich and historical heritage rather than a commodity revenue stream based on souvenirs. The installation could also be a way to attract tourists and inform tourists about the value of the local crafts and the value of these crafts as ongoing cultural heritage.

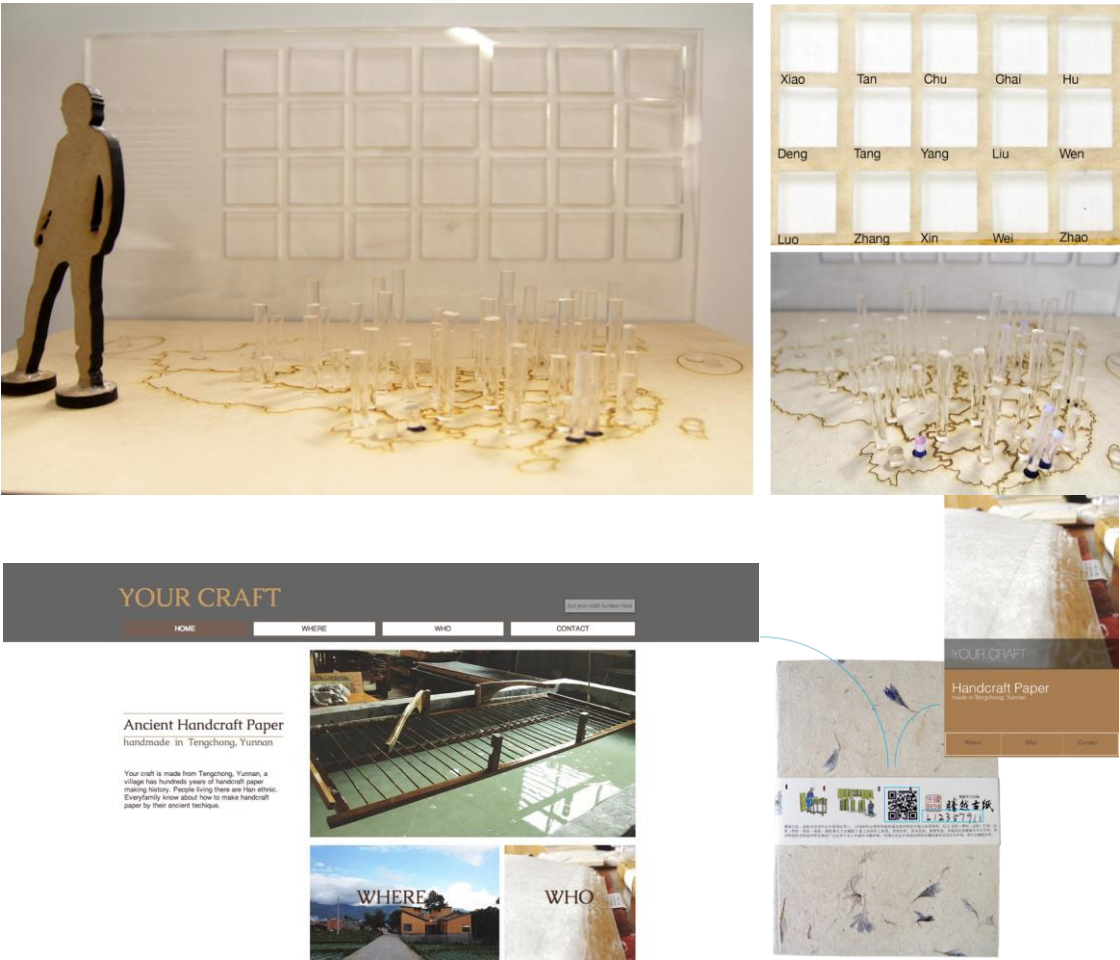


Figure 8. The concept. Top: The concept of the interactive installation at the village; Bottom: The online platform for people who purchase and appreciate the crafts.

Online Platform for People Who Appreciate Crafts

Our design specifies software for the people who appreciate craft as well. This part of the design is actualized as an online platform that provides detailed information about the crafts. A QR code or a craft number is associated with and attached to each craft piece. The person who purchased the craft can look up the craft on the online platform by means of scanning the QR code or inputting a craft number directly. Doing so uncovers information about the craft, including the name of the family who made the craft, village geographic information, as well as the history of the craft and cultural practices and contexts under which the craft was produced. The person who purchased the craft can also send out a voice message through the online platform. The voice message then can be stored in the physical display in the village and become one data point for the interactive components (Figure 8).

Our design calls for local or regional governments to sponsor and be responsible for the map, and we believe they will want to do so for the purpose of pride and preservation of cultural heritage.

Discussion

We presented design research to explore the space in which ICT can contribute to support for rural craftspeople and preservation of cultural heritage. Based on the findings from an in-depth field study of three rural places, we clarified our design goal and formed our design strategies. Given the current business model and diminishing heritage value recognized among villagers themselves and urbanites, one most important design goal is to foster cultural confidence among villagers and promote heritage value among urbanites. Our key strategy is to prioritize the needs of craftspeople, as we believe the heritage practitioners are the drivers of preserving and adapting traditional craftspersonship in today's context. In reflecting on our research and design process, we see three implications that interaction designers who seek to design for preserving crafting heritage can consider.

Embed The Design into The Environment

According to Giaccardi (2001) and Giaccardi, Churchill, and Liu (2012), heritage is connected with space. It is "formed through a sustained yet day-to-day engagement with the materiality of the heritage object as well as with people's environmental settings." (Giaccardi and Palen, 2008). From this field study, we also found that crafting practice, as cultural heritage, is closely correlated to the space in which it takes place. The space affects how people engage with heritage practices. Harnessing the current spatial structure and social customs of the village community and embedding the design into an existing social hub can help raise the collective awareness of the local heritage and also boost individual craftsperson's confidence.

In addition, to support craftspeople and their heritage practice, it is not enough to only focus on the practice. As Cameron and Robinson (2007) writes, “heritage complex ... [is] ... "an institutionalized culture of practices and ideas that is inherently political, socially and culturally circumscribed.” The continuity of heritage practice needs support from many aspects of the environment in which the practice happens. These aspects include economy, policy and even the dynamics of the location. When designing for preservation of heritage and continuity of practice, it is important to take into consideration the underlying complex social structures.

Naturalize Interaction with Tangible Interface

In order for villagers to access the design without barriers, we believe tangible interaction is the most natural way for them to experience the design. Craftspeople and villagers are dealing with tangible objects everyday; therefore, we believe it is crucial to stay away from a purely screen-based solution.

Vary The Technology for Different Parties

One of the findings from the field study is that the technologies used in rural and urban places are very different due to users’ preferences and the availability of technologies. To connect these two communities, the design has to accommodate different technologies to provide the best experiences. For example, in the installation design, the interaction is as simple as pressing a button, while in our website design, we provided relatively more complicated interactions. One example of a more complex interaction is the system’s affordance of sending voice messages as opposed to text through the website to the tangible system located in the village.

Limitations

We used a design perspective to explore preservation of heritage and support for craftspeople. That is, we did design research in the villages, formed concepts, and created a prototype that specifies digital and interactive technology. The prototype shows promise. Nonetheless, to truly understand if this design can truly help, we would need to create the real world installation in the village. That is our future work. Some of the issues that need to be addressed beyond the prototype include how to engage local stakeholders, how to maintain the interactive installation in the village, and how to make sure the energy used for installation is sustainable with respect to the village’s limited resources.

Conclusion

In summary, we designed an interactive installation located at a village as well as an online platform to support communication between craftspeople and people who appreciate the craft, with the goal of fostering pride and confidence associated with crafts for the villagers and create a better sense of connectedness for them.

Our conceptualization is rooted in the findings from design field research. As Koskinen et al. (2012) point out, “[g]ood design research is driven by understanding rather than data.” Our research process strived to understand the targeted audience in their cultural and social context, through synthesizing notes from interviews, observations, and site visits. We came to realization that under the influence of globalization, people in these economically disadvantaged villages need cultural confidence to appreciate their own culture and heritage. We hope our design research could be one step towards focusing ICTs on the cultural wellness of rural people with respect to cultural heritage and preservation.

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