

Designing for Social Urban Media: Creating an Integrated Framework of Social Innovation and Service Design in China

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Abstract. In recent years, social media and social networking are increasing the global crucial topics. More and more people in China begin to merge into this virtual networking. Meanwhile, the continuous expediting of urbanization also occurs in the real world. It is a big challenge for designers to coincide with the new trends of city and media. New design thinking frameworks and methodologies will be needed to solve the emerging problems in the cities of China. As being designers with social responsibility, we have a critical quest that is how to design for the social innovation, sustainably for the most people and improve the social life in the context of developing local and cultural city environment. The trend of service innovation leads a new round of economic growth, which is happening in China. We developed a new framework with three perspectives about social innovation, i.e., social interaction, social integration and social inclusion. To solve the problems brought from urbanization, we need the holistic perspectives with the integrated methods of social innovation and service design. The case studies, which devoted to create the innovated application and service for the urban life in China, show the power of integrating the urban and media together in design thinking and implementation.

Keywords: Social Media, Design Framework, Urban Media, Service Design, Social Innovation.

1 Research Background: Socialization Trends in China

1.1 Urban as New Platform for the Research

Due to the rapid development of urbanization, both the social and environmental have emerged many problems in China, especially in the large cities, e.g. Beijing, Shanghai. Some of the major issues are:

- **Traffic:** Beijing has become one of the world's most congested cities. Despite the government has introduced “odd-even” license plate traffic restriction and

restricted the number of new car purchasing, travel is still a big problem. As a result, the traffic accidents, exhaust pollution are becoming increasingly serious.

- **Population Aging:** With the improvement of living conditions and sustainable family planning policy, China has gradually entered into an aging society. More elderly people living in the city and the number of empty nest families began to increase which, proposed new requirements to the social medical, health and service system.
- **Environment:** environmental pollution has become critical, the air pollution, noise pollution, heat island effect, water shortages, etc., are seriously threatening people's health and the quality of life.
- **Society:** As the economic is in the state of transition, people live in large cities feel more stressful and anxiety about their life and work. Social justice and other issues also lead to dissatisfaction. These problems reflect the current social situation. However, as more concern has been paid and new technologies development, it is possible to solve these urban issues by innovation [1].

1.2 Social Media as a New Way for Social Innovation

When the Chinese government mentioned the inclusive development in the government's conference in 2010, design disciplinary meets a new challenged future in China. Design practice will be more focused on the social inclusion and public service. Particularly, based on the popularity and development of social media and digital media in China, the social network provided a new platform for service design in cyber space, which also enabled the feasibility for the social innovation.

The new technology platform are not only computers but also mobile and Internet. Most cyber service can be provided through these cheap and flexible devices, including mobile phone, portable devices, tablet PC or cloud client. However, the mobile network and Internet in China cannot satisfy the requirement of high bandwidth for so many users perfectly. The current situation in China includes a high popularization of smartphones, a large number of clients and low bandwidth. Restricting Interaction and service design by these Chinese technology characteristics, it is a starting point for participants to design for China. Appropriately designed applications on healthcare, education and entertainment will create a new market and shorten the distance between information societies with low-income by utilizing new technology all over the world.

1.3 Mixed Social Life in China

We focus on exploiting the social media innovation topic. Social media innovation is design for the people and will have extensive and intensive impact of society. The social media is in the profound change now. The change is pushed forward specifically by the revolution of Internet media and mobile media. It reflects on following points: the revolution of social media advances the communication processes by the social group center, enhances the relationship among the groups and improves the activity of social individuals. New social media has become a bridge bringing real social life and cyber space closer. It has brought the possibility of creating a 'flat world', which passes off as much of statement as possible and gives

the equal power of speech to everyone. The new generation Y¹ is very familiar with the new technology and social media. Meanwhile the improvement of information infrastructure in China has provided a mobile and cross-media platforms and applications to serve the social interaction. The most important social networking is *Renren*, *Tencent*, *kaixin001* and *Sina* In China . There are 140 million user registered in *Renren*, 100 million concurrent users in *Tencent*. The social networking games is very popular in 2010 which cause the concern of the whole society and a strong response. It can be seen there is a large target group for social media app and service.

2 Research Methodologies and Process

Research Plan. This paper is interested in find a new way to bridge the social communication with the real city life, and then, create an innovated application and service for inclusive development. With the blooming mobile and social computing technology, the content generating, information collection and attitude sharing in the social network website become a daily life status for most young citizen. People can connect with each other not only by location or event, but also through shared information and attitude about special topics on the SNS platform. Mapping the abstract attitude and relationship based on the social graph will be the fundamental research for design practice. Following the methodology of "research through design" [2], we divided it into two parts: research and prototype design.

Survey and Visualization of Social Communication Pattern. Based on the survey on the social media application in China, we will visualize the social pattern of the user preference and the influence of different topics, and explore the model about how does the hot topic cycle and transform in social network through the support of data mining technology. Research will try to reveal the patterns of collective attitudes and experience expression and transformation through the collaborated collecting, sharing and transferring actions in the SNS platform [3],[4]. Few specific topics which related to city will be selected for the investigation process. We will build a special website or a special topic group in the social network site, such as *Facebook*, *twitter*, *Renren*, *Douban* or *Sina micro-blog* to explore and capture the data about cross-cultural communication.

The achievements of this part will involve the survey of collective interaction patterns in the SNS platform, visualization of the transformation and circulation model of hot topic based on social graph, exploration of journey mapping on cross-cultural collective attitudes and experiences in online community. For example, our

¹ In mathematical sociology, interpersonal ties are defined as information-carrying connections between people. Interpersonal ties, generally, come in three varieties: strong, weak, or absent. Weak social ties, it is argued, are responsible for the majority of the embeddedness and structure of social networks in society as well as the transmission of information through these networks. Specifically, more novel information flows to individuals through weak rather than strong ties. Because our close friends tend to move in the same circles that we do, the information they receive overlaps considerably with what we already know. Acquaintances, by contrast, know people that we do not, and thus receive more novel information.

project “I see Beijing” mapped collective attitudes of the modern and traditional architectures in the cross-cultural context. Project “Flow” will study the media transformation and pass information through cross-culture context.

Social Media-based Prototype Application Design. Based on the findings from social media research, we will design an application prototype on the selected topic of cities. The impression of the city means the reflective experience of the real urban culture, life and landscape. However, these are very hard to produce a prototype and be visualized. Therefore, a special medium, such as smart product, that can connect the virtual and real world is needed. Alternatively, we can select topics on infrastructure of city, such as Transportation, care, security, help, etc. as a thinking strategy and breakthrough point to present the new application and service about the specific perspective of the city. The patterns and prototypes developed in this research will be the reference for the further research on social communication; the practical deliverables also can promote the social innovation in the context and culture of China [5], [6].

3 Framework of Our Research

3.1 The Model of Communication

Based on the SNS design a method and theory of communication are needed. In the traditional model of network communication, users use the tools to post and receive the information in the communication platform. It can be noticed that the communication platform collect the personal opinions and form a subject to attract more audiences when it became a large scale it will be a public opinion and will break the old balance and get more respond, shown as Figure 1.



Fig. 1. The model of communication

3.2 From Individual to Social Communication

In terms of the media experiencing from individual communication to mass communication and social media communication, compare with the impact and the participations, we can see that the weak tie and the strong tie play an important role in the communication and the weak tie create the new opportunities so the people can contact with each other in position, time, event or attitude. There are design gap for service application. In the urban media, users are aggregate together and form small communities for communication. The traditional communication studies: “symbolic interactionism theory” believes individual selves are generated from interaction with

others and during the interaction, people shaping themselves based on other people's perception (the looking glass self). The community is a background of individuals and, therefore, forms primary group. People are connected through weak ties and strong ties. In the varying environment, people are generating, connecting, managing, and sharing which forms the top level of social interaction (see the figure below). The first level of the framework map represents individual, the second level is media and the third level is location. These three levels are corresponding to the social interaction, integration and inclusion respectively. In the first level, we study commutation between individuals and groups through information generation, sharing and social network in a virtual space. In the second level we exploit how to combine individuals with urban media to produce applications and services, meanwhile, meet the requirement of social life, work and entertainment. Finally, the third level is in a real environment and we consider from commercial, society and technology aspects to achieve the inclusive social innovation.

3.3 Integrated Framework of Social Innovation and Service Design

Through social media, individuals can share their own information, and they can experience and share the public information together. Social integration means to connect people with media and environment, integrate systematic urban basic installation platform and converge the power of trans-media. Social inclusion makes personal service transfer to public service for city. From the perspective of social responsibility, social fairness and social care, which represent the value of service by combining design, technology and business together. Thus, a new model based on social media innovation can be provided. According to the research mentioned above, an integration framework is created for solving the integration of social media and

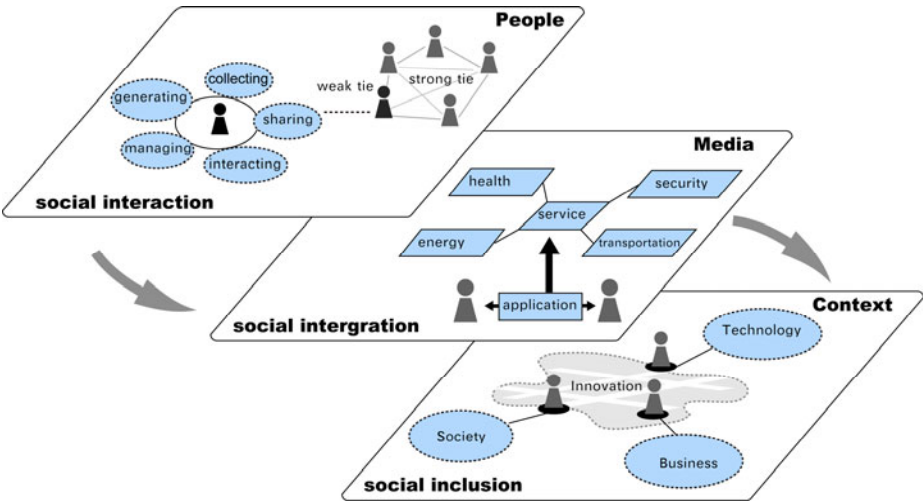


Fig. 2. Integrated frameworks

urban installation, which is also used for new social innovation application and service design reference point, shown as Figure 3. The framework includes personal service and shared service. The different weak tie circles have been integrated to be an urban service network by social media. These innovation applications provide the number of active interactive users, smooth the information system environment and widely applicable space and topics for social media, through which the social innovation is possible, shown as Figure 2.

4 Case Studies

Based on the research of social media, few projects were developed to implement the theory and framework, including the application of social communication model and service design through the platform of social network.

4.1 Visualizing and Transfer Social Mind Based on Social Networking

Mapping Collective Attitude through Social Media Application. In the social media application, people connect through media and content. Based on cross-cultural social media, the project: “I see Beijing” expressed the shared manner of community in the urban environment. The social media has provided an enormous participating space for the users, with the characteristics of high participating, openness, less barriers, easy to share, community, connectivity and so on.

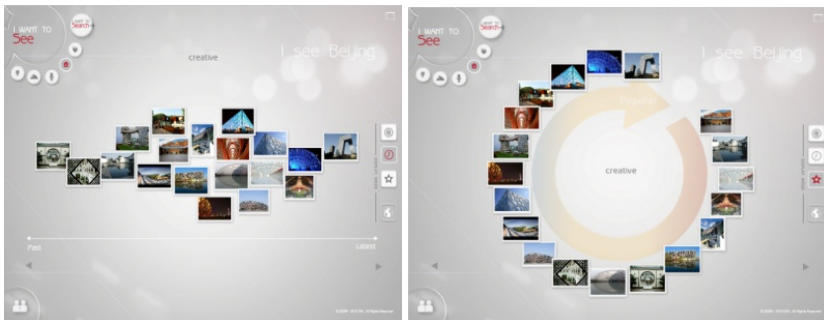


Fig. 3. Mapping collective attitudes through image

“I see Beijing” is based on exchanging innovative design on social media platform, and behalf of each person's different angle of view on Beijing. Choose to share your manner and observe difference between one's idea and others. After having collected more and more angles of view, the thing will become more three-dimensional and be close to the reality (shown as Figure 3). In the design process, attention has been drawn on the level of interpersonal interaction while the interactive mode and the interface design can well meet user's demand and behavior pattern [7].

Beijing~New York Flow

A collaborate project among Parsons The New School for Design in New York, Tsinghua University in Beijing and Yuanfen~Flow, this project is a cross-cultural dialog between China and the USA. It will utilize video/audio, multimedia and SMS text messaging to find similarity between these two ideologically and geographically distant cultures. The subject of the dialog is urban media: culture, art, fashion and technology. Through the mutual supplement, explanation, mark and share to eliminate the misunderstanding and the prejudice.

4.2 Service Design through the Platform of Social Networking

Connecting people by smart product and service. In the “Smart connector” project, we were going to find a new natural way to connect people within the social networking to share information and create co-experience. [8] With the extensively used social networking sites, been contacted by SNS has become a popular life style. The project aims to find a new kind of social experience, with more natural way and more concise interactive language and also enable to communicate with the virtual world. For the prototype, a four-wheel drive cars that controlled by a PC was made and an external load of two infrared sensors to make actions of a variety of movement. The sensor signal can also change the image content of social network server which is displayed on the PC. Sensor controls different content can be switched by the image [9] (shown at Figure 4).

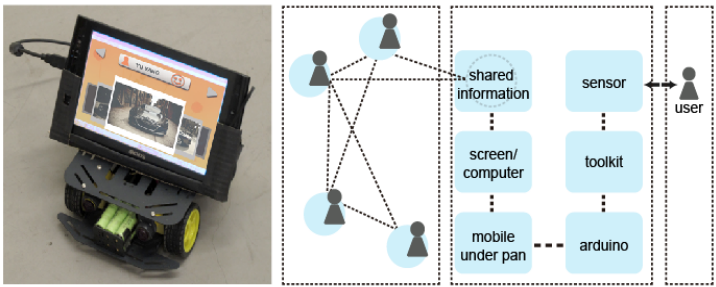


Fig. 4. “Smart connector” project

Design for Co-driving in Beijing. This “Easy Taxi” project is about how to use the social media for taxi drivers. People connect with the environment and are able to integrate the urban infrastructure platform and converge the power of trans-media and therefore, make a better service system. In this project we used the service design method through analysis. We found the main problem for the driver is communication, traffic condition & guide, park and toilet. In the analysis of traffic, focus on the weak tie between the different groups of taxi drivers in Beijing and the driver can sharing the information on the road (shown as Figure 5).

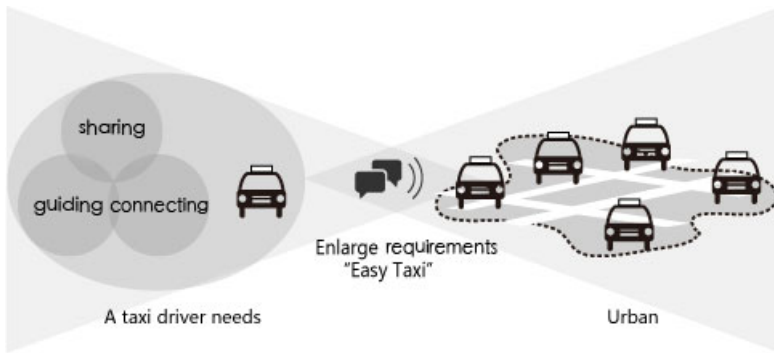


Fig. 5. “Easy Taxi” project for co-driving

Design for Urban Media: Security and Circulation. This research examined the inter-relationship between emergent digital media systems and existing urban infrastructure by studying the way the cities combined their media and infrastructure systems and we refer as Urban Media in this paper. “PublicEye” is a public service for the crowd security in a huge gathering. The system can help the organizer sense and monitor the crowd in specified area and broadcast message to people through mobile networking service on site, shown as Figure 6.

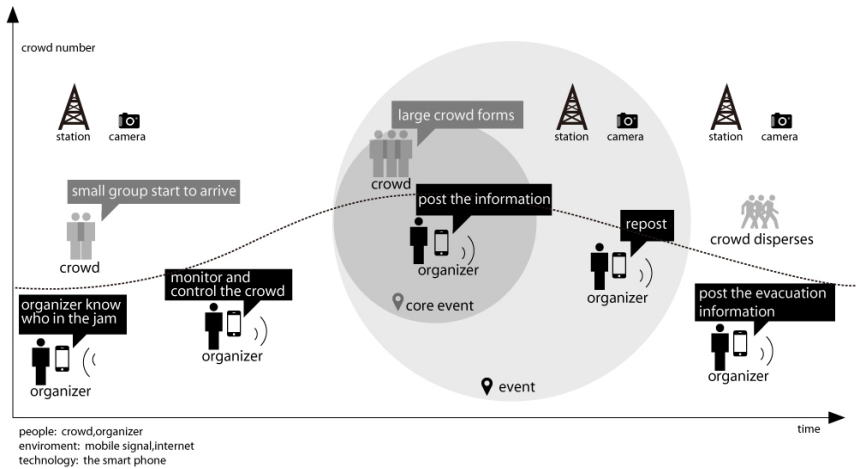


Fig. 6. Design for city security

5 Discussions and Future Work

Social media plays an important role in both integrating the real and virtual communities and servicing the society [10]. It also provides the possibilities to improve the ability of cities through design framework. Comparing with the product

renovation, it is more valuable for designers to innovate the whole system inside the business or public service industry. The future study should be more comprehensively and deeply focused on the following applications and services.

Mapping and Visualizing Info-structure. The new research combined the social graph with the data mining methodology, media model and the user study for further development. Inside the social information flow, all of the contents were come from users. It helps us understand the human emotion and culture [11]. Meanwhile, we can present the city from a new perspective, such as happiness, angry, sadness, fun, surprise, scare and sorrow. Through the result of this research, we discovered there were various forms of expression about sharing attitude and thought. The visualization can reveal the strategy and trends of Chinese urban development at a macroscopic level.

Research on the Co-design and Co-production. With the development of crowdsourcing, the service industry has paid more attention on co-design and co-production. With the perspective of co-working, we consider about how to share, translate and shape the valuable knowledge ultimately in virtual space. This study was better combined the innovation needs of the labor-intensive industries, rich culture and unbalanced development in China, the Chinese designers need to improve the public service innovation and satisfy the social requirement in Chinese city life. Our research leaves the designers large room to play.

Design for Public Service and Social Impact. Digital survival has become a part of people's urban life which has been involved in both working and entertainment. It does not only represent the social networking, but also some specific applications, e.g. location-based service, event-based service that really helped our life. The mobile SNS applications, such as iPhone app. Waze and Every Trail, provide the new extensions in cyberspace for Chinese cities. Based on co-design and co-production, the next direction of practice is to design applications that are focusing on social responsibility which includes health, safe, care, assistance, and environment.

Integrated Design Theory and Interdisciplinary Education. Due to the requirement of social interaction and service design, we need to integrate social innovation, user experience, service design, sustainable design and information design methodology to solve the urban problems by theory innovation and practice. With the current situation in China, training responsible designer through interdisciplinary program is vital for the inclusive development. Integrated design theory and interdisciplinary education will lead the development of social innovation to future.

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