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Empowering Migrant Workers and Labor NGOs in China: Creating a Law Searching Tool through a Design Science Approach

Research-in-Progress

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Abstract

Labor NGOs in China has been utilizing various social media tools, such as WeChat for networking workers and promotion. In the year 2017 WeChat Mini Program was released, allowing developers to create “sub-application” within WeChat. This research evolves from a laws-searching WeChat Mini Program development project, which will adopt a design science approach, follow the design science research methodology (DSRM) process model, and measure the effect of the WeChat Mini Program with the concepts from information systems success model and post-adoption behaviors. We propose that the law-searching WeChat Mini Program can sever labor NGOs in terms of legal service and promotion.

Keywords: Design science, DSRM, WeChat Mini Program, labor NGOs, migrant workers

Introduction

How Information Systems (IS) may help nonprofit organization such as labor nonprofit organization (NGO) is a relatively novel research area in the IS field. In this study, we examine how a laws-searching WeChat Mini Program may influence both the labor NGO as well as the migrant workers which the NGOs serve, from the perspective of design science. In China, the struggle of labor against employers or government related agencies has been on for decades. In 2012, the number of arbitrated labor disputes has reached over 640 thousands, with more than 1.1 million laborers involved (Chan and Selden 2014).

Since the beginning of Chinese economic reform, literally known as “Reform and Opening-up”, Chinese workers, especially migrant workers, have been suffering from rights deficits, such as forced work overtime and pay delay or default (Wong 2011). Chinese migrant workers refer to those who come from rural area to urban area for work, but enjoy less benefit or security treatment than the local citizen do. They cannot enjoy the same benefit of social welfare because of Chinese hukou administration system.

Recognizing such social injustices, labor activists started establishing and running labor NGOs since 1990s, which evolved from government-banned independent trade unions (Chan 2012). Organizing strikes is an illegal activity and may get labor NGOs shutdown by the government. Therefore labor NGOs use other approaches to help workers: providing legal assistance, consultancy, training, education, community service and other services (Chan and Hui, 2017; Bieler and Lee, 2017b; Gransow and Zhu, 2016; He and Huang, 2015; Chan, 2012).

Since 2004, labor NGOs have been taking advantages of the digital age: using various online tools, from QQ, Weblog, online forum, Weibo, and now, WeChat (Qiu 2016). WeChat, a social media tool, enjoys high popularity in recent years among Chinese. Since its release in 2011 by Tencent, it

experienced tremendous growth with 938 million monthly active users as of the first quarter of 2017 (China Tech Insights 2017).

In the beginning of 2017, WeChat Mini Program, the “sub-application” within the WeChat ecosystem, was released, enabling individuals and organizations to create mobile applications within WeChat, with a specific framework highly similar to HTML standard. This product allowed web developer to create mobile applications that can be easily accessed and disseminated in WeChat.

This research evolves from a WeChat Mini Program development project, which may involve three labor NGOs in China. Two of them are student associations in Renmin University serving labor workers, the third one is unregistered, located in Shenzhen. The function of this WeChat Mini Program is searching law articles based on keywords. This function may seem very basic, however, in China labor workers usually do not have access to high quality information, and are frequently being misled by search results online (Cartier, Castells and Qiu, 2005, Qiu, Castells and Cartier, 2009). A comparative study shows that in India, majority of legal e-resources are lacking search features and mobile-based views are not available (Bhardwaj and Madhusudhan 2016). In China there is also a problem for underprivileged workers to access mobile-friendly searching tools of laws that protect their rights. In this study, the tool we develop is to help workers to better access labor-relevant laws, as well as help member of NGOs access relevant law articles more efficiently. The first author has personal connections with the NGOs involved, and the trust built during the past interactions make the data collection possible, and probably more reliable.

The research in progress aims at enabling and improving both labor workers and labor NGO’s access to labor-relevant laws, and empowering the workers to defend their rights in the workplace. The research questions of this research are: 1) How to design a law-searching WeChat Mini Program for labor NGOs in a design science approach? 2) To what extent can this WeChat mini program fulfill the requirements according to users’ perceptions?

Methodology

Design science research methodology (DSRM) process is chosen because it is the best fit of this project. There are a considerable number of system develop researches adopt the DSRM process to design and develop IS artifacts, such as a hospital-based business intelligence system (Kao et al. 2016) and a performance-oriented e-learning environment (Wang et al. 2011).

Von Alan et al. (2004) defined design science research as “creates and evaluates IT artifacts intended to solve identified organizational problems” (Von Alan et al. 2004). Based on this definition (and broaden the focus to IS artifacts instead of IT artifacts), Peffers, Tuunanen, Rothenberger, and Chatterjee (2007) proposed and developed a design science research methodology (DSRM) for the production and presentation of DS research in IS. The DSRM process consists of six activities:

- 1) Problem identification and motivation: Define the specific research problem and justify the value of a solution.
- 2) Define the objectives for a solution: Infer the objectives of a solution from the problem definition and knowledge of what is possible and feasible.
- 3) Design and development: Create the artifact.
- 4) Demonstration: Demonstrate the use of the artifact to solve one or more instances of the problem.
- 5) Evaluation: Observe and measure how well the artifact supports a solution to the problem.
- 6) Communication: Communicate the problem and its importance, the artifact, its utility and novelty, the rigor of its design, and its effectiveness to researchers and other relevant audiences.

There are four possible research entry points to start the research process: problem-centered (initiated by step 1), objective-centered (initiated by step 2), Design and development-centered (initiated by step 3), and client/context (initiated by step 4). The process can proceed with iterations, e.g. after evaluation in step 5, go back to solution seeking in step 2 (Peffers et al. 2007).

Problem Identification

Labor NGOs

After more than 3 decades, under the effect of Reform and Opening-up policy, China has achieved great success in economic development. However those who actually drive this economic boost -- Chinese workers -- are suffering from long hours work, low pay, and lack of welfare benefits. According to a research on migrant workers (Wong 2011), 46.9% did not sign a labor contract, 60.5% worked more than 8 hours a day, 52.5% did not enjoy statutory rest days, 43.0% did not receive overtime pay, and 22.1% experienced pay delay and default in last six months. This phenomenon is described as “super-exploitation”, and it has not been simply accepted and Chinese workers try to fight back (Bieler and Lee 2017a).

Origin

Chinese official trade union, the All-China Federation of Trade Unions (ACFTU), the only legal organization representing workers, had long been neglecting their duties to enforce labor laws and protect workers’ rights, which subsequently triggered labor activists’ attempts to form an independent trade unions that would not be subordinated to the ACFTU in the early 1990s (Chan 2012). According to Chan (2012), the attempts of establishing trade unions eventually failed because of government ban, therefore labor activists try a flexible and realistic alternative to provide assistance and support: organizing labor NGOs.

Informal labor NGOs play an important role in organizing workers. According to Bieler and Lee (Bieler and Lee 2017b), it is challenging for informal labor NGOs to survive in China, because the 1982 constitution removes the right to strike and independent trade unions are not permitted. There are three basic strategies for labor NGOs:

- 1) to collaborate with organizations with a clear legal status (e.g. Communist Youth League, or academic institutions)
- 2) register as a company (e.g. self-employed person or limited company)
- 3) not to register at all

This comparative analysis has also found that informal labor NGOs in cheap labor electronics sector mainly focus on getting workers individual and collective rights, while in high-value added sector the focus turns to organizing recreational activities. This research will focus on the former type of labor NGOs, whose service subjects are mainly less advantaged people, usually migrant workers from rural areas (Wong 2011).

Common Activities

Researches of this type of labor NGOs examined their basic activities, as shown in Table 1 (Bieler and Lee 2017b; Chan 2012; Chan and Hui 2017; Gransow and Zhu 2016; He and Huang 2015; Xu and Schmalz 2017).

Table 1. Common Activities of Labor NGOs

Type of activity	Activities	Reference
Legal assistance and consultancy	Counseling Lawsuit paper handling	Chan and Hui, 2017 Bieler and Lee, 2017b Gransow and Zhu, 2016 He and Huang, 2015 Chan, 2012
Rights protection	N/A	Gransow and Zhu, 2016
Training and education	Collective bargaining Work safety Adapt to urban life	Bieler and Lee, 2017b Gransow and Zhu, 2016 He and Huang, 2015

		Chan, 2012
Community services	Libraries Child care Hospital visit Organize activities	Gransow and Zhu, 2016 He and Huang, 2015 Chan, 2012
Networking	With workers With other organizations	Gransow and Zhu, 2016
Surveys and investigate	Industrial surveys Social surveys Investigation Audit	Gransow and Zhu, 2016 Chan, 2012
Promotion	Distribute informational materials Signing petitions Targeting the media	Gransow and Zhu, 2016 Chan, 2012
Organizing strike	N/A	Xu and Schmalz, 2017

WeChat and WeChat Mini Programs

WeChat

WeChat (*Weixin* in Chinese) is a mobile app launched by Tencent in 2011, now it has reached more than 938 million monthly active user accounts as of the first quarter of 2017 (Tencent 2017b). According to the 39th Statistical Report on Internet Development in China, among 731 million Internet users, 79.6% users' the most frequently used app is WeChat (China Internet Network Information Center 2017). WeChat is not only a mobile instant message application, moreover, it has been the most widely used social networking service in China since 2013 (Gao and Zhang 2013). Some of its important features are:

Moments: allow users to publish text, images or share links of article to their WeChat contacts and to comments and like other's posts. It is comparable to Facebook timeline feature. According to the 39th Statistical Report on Internet Development in China, it has been the most adopted social media in China, with the user adoption rate of 84.3% (China Internet Network Information Center 2017).

Official Account: Individuals or governmental organizations can acquire such accounts for free (for company, register fee is 300 yuan per year). Users can subscribe to a certain official account to receive its pushed messages (Tencent 2017c). It is used to disseminate information and for internal communications. Individuals can read messages and communicate with others via these official accounts (Li et al. 2016).

Mini Program: WeChat Mini Program is a new feature of WeChat. Its framework allows developers to quickly develop a new Mini Program. Mini Programs can be easily accessed and disseminated in WeChat. Like WeChat Official Account, it can be deployed by individuals and organizations (Tencent 2017d). It was released in January, 2017; and it reached a penetration rate of around 20% in April (China Tech Insights 2017). Mini program can be attached to WeChat Official Account, or included in pushed messages of WeChat Official Account.

Technology Introduction of WeChat Mini Program

User perspective (GRAZIANI 2017): WeChat Mini Programs are "sub-applications" within the WeChat ecosystem. They enable developers to provide advanced features to users such as e-commerce, task management, coupons and etc. via WeChat. User can only access WeChat Mini Program inside WeChat, from Mini Program search, Subscription Account (A type of Official Account) article, chatting messages, or scanning QRcode using camera, but it can't be posted on WeChat Moments yet. For Chinese users, to get a WeChat Mini Programs is as easy as (perhaps

easier, since there is a size limit of Mini Programs, downloading time is shortened) to download application from regular APP stores. Moreover, if users only want to use the basic function from a certain service provider, the Mini Program version will be preferred because it takes less memory space than regular APP.

Developer perspective (Tencent 2017a): The framework of Mini Program has provided its own view layer description languages, WXML and WXSS, as well as a logical layer framework based on JavaScript. Tencent also provides a special development tools for developers. The WXML and WXSS language are similar to HTML and CSS language respectively, which means web developers can easily learn and develop Mini Programs. It has also provided a data transfer and event system between the view layer and the logical layer which makes it easier for developers to focus on data and logic. However the components of this framework are different in HTML standard, which causes extra work to migrate a regular web app to Mini Program. For example, for safety reasons, a strict policy was set concerning data security, which means data transmission is only allowed with white-listed domains in HTTPS connection, and the release of Mini Programs requires a review from WeChat Mini Programs team of Tencent, and if the Mini Program concerns policy or regulation, a second review from government Internet regulation office needs to be conducted.

Labor NGOs and WeChat

Study has shown that Chinese NGOs emerged in the digital age, as they naturally use social media as the primary means of engagement (Zhou and Pan 2016). The purposes of using digital media are: keeping in touch with peer organizations; internal communication with staff; publicizing the organization and its events; fundraising; and keeping target audiences informed of the organization's activities (Sommerfeldt and Xu 2017).

A study of discursive construction of identity through interaction in WeChat list the typology of communication within a WeChat group chat of a Chinese NGO: besides from community sharing (related or not related to the projects of NGO), group members will also ask for help (Ruelle and Peverelli 2017). According to its Appendix 1 - Category 3 in that study, some of the questions are legal questions.

Labor NGOs have been trying to utilize social media as a tool to reach workers and post articles. Since 2011, labor NGOs started to adopt Weibo (a Chinese social media, similar to Twitter) as an advocacy approach, later in 2013 when Weibo lost its popularity, WeChat became its substitution (Qiu 2016). WeChat (as well as QQ, another instance message centered application created by Tencent) plays an important part in the 2013 Yantian dock strike. The dockers were not allowed to gather often, but they found opportunities to be together when they were off work and exchanged ideas by using QQ and WeChat, through which some important conversations could be undertaken to determine the time and actions of the first stoppage (Cao and Meng 2017).

Notably, a study of Chinese NGOs' usage of social media shows that, although NGOs value digital media, evaluation of digital media usage are usually overlooked due to potential cultural resistance, differing expectations, limited account access (registration hinders evaluation), and lack of internal capacity (Sommerfeldt and Xu 2017).

Although there hasn't been any research studying how WeChat-related products are applied in labor NGOs' activities yet, plenty of labor NGOs are already using WeChat Official Accounts to publish articles for information distribution and promotion purpose. However there is no WeChat Mini Programs-related practice yet.

Summary

The context of the research is that in China plenty of labor NGOs are providing legal assistance and consultancy, as well as other services for underprivileged workers. In the meantime, labor NGOs are also utilizing social media to assist their work, from QQ at the beginning, to WeChat nowadays, because of the high popularity of WeChat. In the beginning of 2017, WeChat Mini Program, a "sub-application" of WeChat, was released. The law-searching Mini Program helps labor NGOs in terms of

providing legal services, educating workers and earning reputation. The law-searching Mini Program allows users to search for law terms, and share the search results easily. Comparing with using search engine such as Baidu for law searching, the Mini Program returns trustworthy results, while Baidu has been criticized for ranking results according to payments by websites, and the irrelevant results returned increase users' cognitive load. In addition, though users can copy and paste texts and share texts through WeChat, the Mini Program reduces the procedures involved and users can share law terms through clicking "share", and other readers will also be informed of the source of the texts, i.e. from the Mini App, and thus improves source credibility. In addition to law terms searching and sharing, the users can also contact labor NGOs which introduced the Mini Program for help.

Objectives of the Solution

From the literature review of the research context, we can tell that legal assistance and consultancy is one of the common services that labor NGOs provide to workers. Meanwhile, training, education, networking, and promotion are also among labor NGOs' activities.

Designing and developing a WeChat Mini Program that can search for laws serves multiple purposes:

- 1) By using the Mini Program to search, workers will know whether or which rights of theirs have been violated. It serves the education purpose.
- 2) By sharing the Mini Program to other WeChat contacts or into a group chat so that other WeChat users can use it, workers helps labor NGOs with networking. If other workers further realize the need to contact the labor NGOs, the Mini Program also contributes to the promotion of the labor NGOs.
- 3) Members of the labor NGOs can use it during legal consultancy, especially when they don't have access to a computer or professional legal database.

The WeChat Mini Program should fulfill certain requirements. First, it should be programmed as the official document required, using the special framework of WeChat Mini Program, so that it can function normally, showing required text of laws within tolerable time and without any bugs. Second, it should contain clear message when being reposted so that other WeChat user will know what this Mini Program do and run it when needed. Third, it should contain certain contact information about the labor NGOs that can provide further legal assistance and consultancy. Finally, the design of the Mini Program should be as easy to use as possible.

Research in Progress

To continue this research, the following steps of the DSRM progress need to be done, including design and development, demonstration, evaluation and communication. The research process is shown in Figure 1.

Design and Development

The design and development process started in September, 2017. We applied agile methods in the design and development process: two iterations of development were planned.

After several discussions with two labor NGOs (Legal Aid Center of Renmin University of China and an unregistered labor NGOs named WeiGongHui), requirements of the Mini Program were set. In the meantime more than 30 labor-related laws and legal articles were chosen as the basic document for the search function. Development of the 1st iteration was finished in early December, 2017. Two week later the Mini Program passed the review, with certificate document provided by Renmin University of China. The reviewed version of the Mini Program was released in mid-December.

Suggestions of the Mini Program have been collected. In January, 2018, the second iteration started by analyzing the suggestion of improvement, followed by changing requirements, programming, submitting, reviewing and releasing. The second version of this WeChat Mini Program passed review and was released on March 17, 2018.

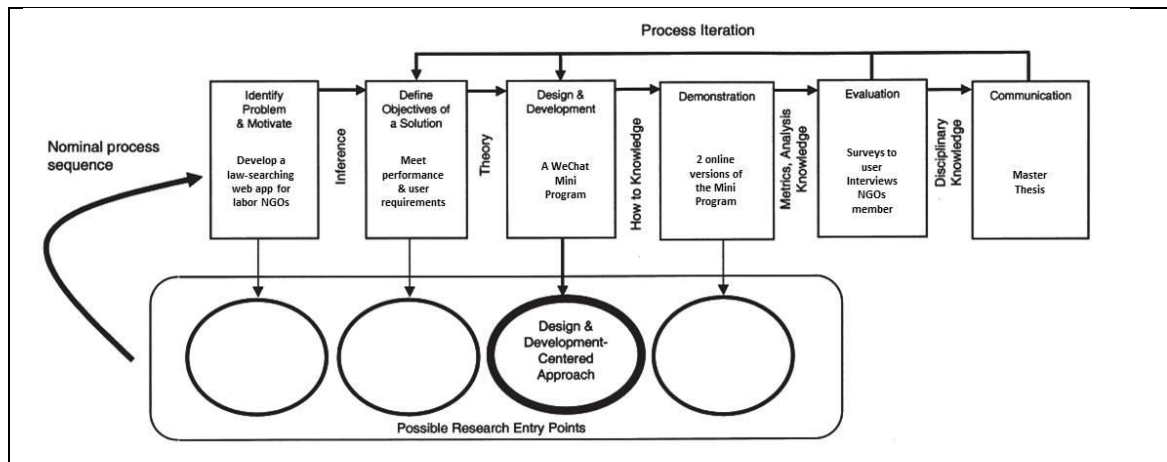


Figure 1. Research Process (adapted from DSRM Process model in Peffers et al. 2007)

Demonstration

After the review, the Mini Program will be deployed to Tencent's server and released, so that every WeChat users can access it. Initial promotion of the Mini Program will be conducted by member of the labor NGOs, by the means of posting this Mini Program on social media, which will begin after the second development iteration.

Evaluation

The preliminary plan of evaluation is conduct a survey on users, collecting data on system quality, service quality, users' satisfaction, intention of reuse and intention of recommendation. Actual usage data will be collected from Tencent.

Communication

Draw conclusions after analyzing data from evaluation step, and understand what factors influence users' evaluations.

Conclusions

The use of social media relevant technology and applications to empower the less advantaged has become possible in the recent decades. Our research in progress addresses the problem by designing and implementing a law search program for the migrant workers served by labor NGOs in China. Through the design and implementation, we consider: (a) individual needs and the scarcity of access to high quality information of the less advantaged, (b) the connection between law learning and intention to improve work situations, and (c) the communication between migrant workers and members in labor NGOs. We hope the research in progress may provide insights for both technology oriented audience and practice oriented audience, as the study will examine both design considerations, social contexts, and the applications potential impacts on users.

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